Gleanings in Bee Culture

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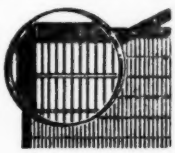

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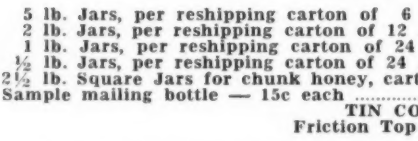

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Bee Lines to The Editor

"You are to be congratulated on the type of bee journal you turn out, also the new style of printing.

"I notice on page 620, October, that an English beekeepers uses a middle entrance by simply setting the super (or upper hive body) back a little to make a ⅜-inch entrance over the tops of the brood frames in the lower brood chamber.

"It was ten years ago this past season that we commenced using this middle entrance the year 'round, being reduced for winter, and the lower entrance closed entirely for winter.

"The two entrances in hot weather facilitate ventilation. We also set the metal cover askew in hot weather.

"We never have any trouble from rain entering the hive by nailing the middle entrance blocks half an inch above the middle entrance.

"I have enjoyed very much 'The Bees of Kiliatos' ".—Carl Kalthoff.

Monthly Honey Report

October 21, 1953

The following figures represent an expression of current prices from beekeepers and honey packers over the country. They are based on several reports from each state averaged with the reports in the region. Where insufficient information is returned, prices have been omitted from the chart. Where three figures appear on the chart the first figure represents the low, the middle figure represents the average, and the third figure the high price in cents per pound. Where only two figures are used the low and high are shown.

	North & South Atlantic	South Central	North Central	Mid-West	West
Bulk Honey:					
Table Grade	10¾-12½-15c		11-11½-12c	11-12-12½c	10-12-15c
Industrial Grade	9½-12-14½		9-10-11	10-10½-11	8½ 10
Price to Grocers:					
5 lb. jar - can	18-21-25	19-20-25	16-19-20	16-17-18	16 20
3 lb. jar - 12's	23-25-27½	20-21½-25			
2 lb. jar - 12's	20-22-24	21-24-25	19-20-25	20-22-25	21 25
1 lb. jar - 24's	22-25-31	25-27-29	22-25-27	24-26-29	22 25
Comb Honey:					
Cs. of 24 Sec.	$7.40-9-10		$8.40-9.60	$7.20-9-9.80	
Retail Price:					
60 lb. can	15-19½-22		15-16-22½	15-16-20	16-17½-20
5 lb. jar	20-25-30	22-25-28	20-22-25	20-22-25	20 25
3 lb. jar	29-33-40	28-28½-30	25 30		
2 lb. jar	25-35-37	30-32-33	25-27-32	25-27-31½	25-30-35
1 lb. jar	30-35-40	30 35	25-30-35	28-31-33	27-29-35
Honey Sales:	Fair	Good	Fair	Fair	Fair
Estimated Crop:					
Conditions based on normal %	65	85	70	75	60

A few comments were as follows:
"A normal crop although a very dry summer."—Delaware
"Bees that were not exposed to DDT airplane spraying filled up heavy for the winter, but heavily sprayed yards have to be fed or destroyed."—Northern New York.
"Poorest crop ever harvested. Everything burned up by dry weather. May have to feed next spring."—Southwestern New York.
"Honey of good quality. Fair crop in some sections."—Ohio
"Honey crop varies considerably with different colonies in the yard. Feeding necessary."—Minnesota.
"Normal honey crop in Manhattan area."—N. E. Kansas.
"Sales rather slow. Honey prices firm. Local crop less than previously believed."—Ore.
"Orange honey is scarce."—Southern California.
"No rain during August or September. Record drought. Will have to feed."—S. E. Ariz.
"Very dry and hot since September 3."—Oklahoma.
"Prices improving. Crop larger than expected."—Wisconsin.
"Honey crop about 50 percent of normal."—Michigan.
"Normal crop with honey selling at a fair rate."—Mississippi.

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G 6	Standard Frames in 100's only, long top, 45 lbs.	9.95 per carton
G16	Standard Frames in 100's only, 2-piece bottom, 45 lbs.	9 95 per carton
G22	Shallow Frames in 100's only, long thin top, 25 lbs.	7.25 per carton
G26	Shallow Frames in 100's only, long thick tops, 38 lbs.	8.95 per carton
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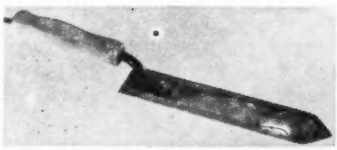

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1. The names and addresses of the publisher, editor, managing editor, and business managers are:
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Editor: M. J. Deyell, Medina, Ohio.
Managing Editor: M. J. Deyell, Medina, Ohio.
Business Manager: Alan I. Root, Medina, Ohio.

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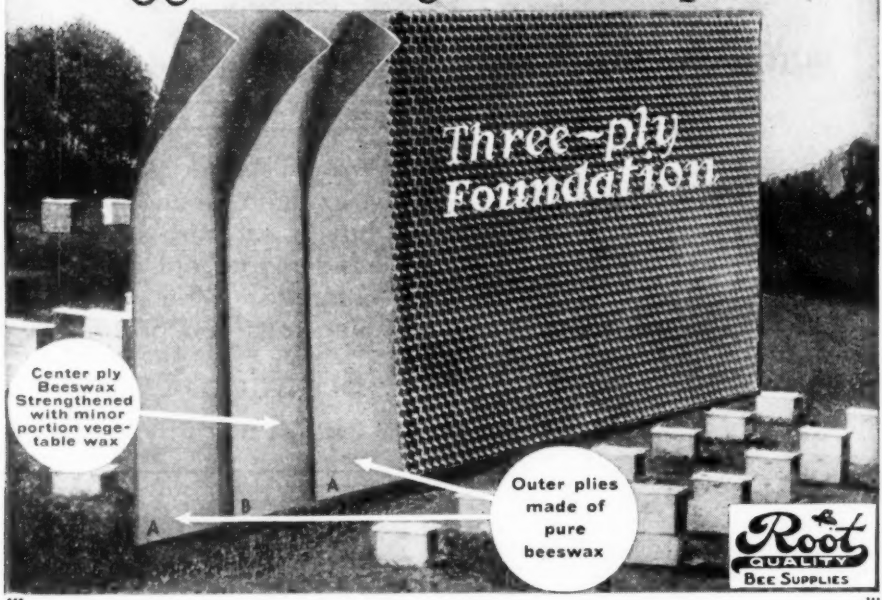

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Gleanings in Bee Culture

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Be Beeswax Wise!

By W. L. Coggshall, N. Y. Extension Apiarist

BEESWAX COMES from cappings removed before honey extraction, old or damaged combs, burr combs, and hive scrapings.

Cappings are the richest source of the lightest colored wax—about 1 to 1½ pounds per 100 pounds of honey extracted. Wax from old combs is generally darker in color, partially due to the manner of rendering. Usually a hive of ten standard combs contains 2 to 2½ pounds of wax. Scrapings should be rendered separately because they contain propolis (bee glue) which alters physical and chemical characteristics of wax.

While most beekeepers with a small number of colonies and many commercial beekeepers ship cappings and comb material to commercial rendering plants, others will wish to do the work themselves during the winter months. Some of the rendering equipment may be operated over a stove or open gas flame, but this is a dangerous practice because hot beeswax burns fiercely and has been responsible for many fires. Steam is most convenient to use and certain pieces of equipment for rendering wax require it.

Suggested Rendering Methods

Cappings:

(1) Melting tank followed by hot-water press for residue **or**

(2) Steam chest followed by hot-water press for residue

The melting tank is preferable to the steam chest for cappings because it is quicker, easier, and cuts down chance of emulsifying wax.

Note: Special capping melters render most of the wax satisfactorily but unless properly used they seriously damage some of the honey which passes through them.

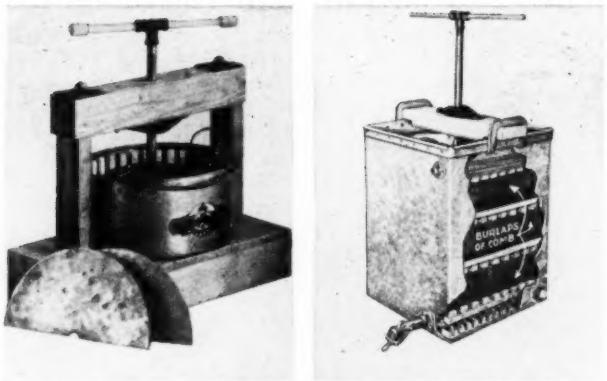
Combs:

(1) Steam chest followed by hot-water press for residue **or**

(2) Hot-water press

Combs can be removed from the frames easily after heating in a steam chest, compared with dipping them in hot water or cutting them out with a knife. Using a steam chest before placing the material in the hot-water press saves time and effort.

Emulsified (granular or spongy) wax is often encountered when combs or cappings containing considerable honey are rendered. It appears to be



Small hot water press holding one layer of residue (left). Hot water press cut away to show separation of layers of residue (right).

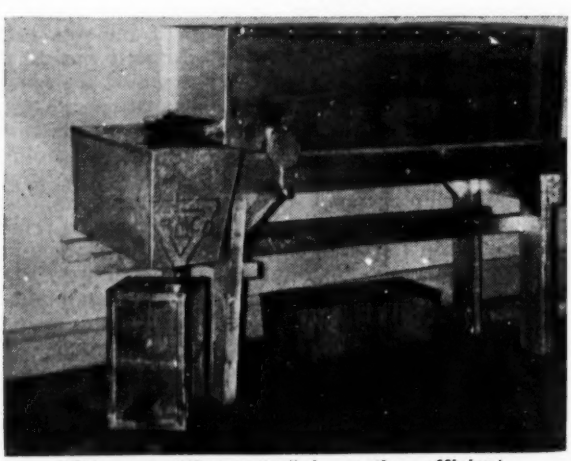
caused by some constituent of honey acting as an emulsifying agent. It does no damage but the wax must be restored to the proper form for sale. It should be remelted, preferably with additional wax, over clean hot water and allowed to stand for a few hours before cooling.

Used five-gallon honey containers make excellent wax molds and often may be obtained without cost from packing plants. Remove the top with a hammer and heavy butcher knife or hive tool. If the solid wax cake cannot be removed, cut down one side of the can with a heavy knife and discard the container. Pouring hot water on the inside walls of the can just before filling helps prevent the wax from sticking.

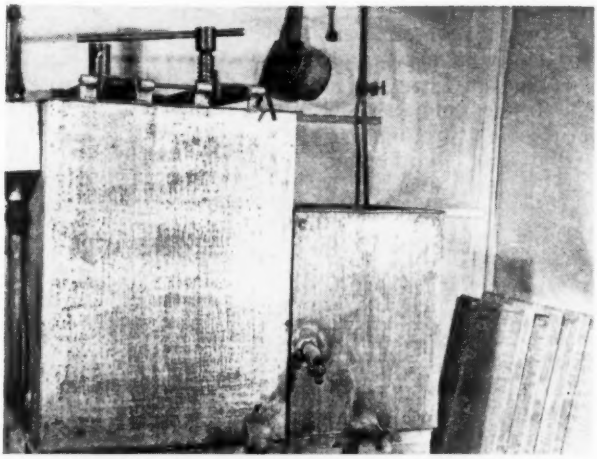
Aluminum, stainless steel, wood, or glass-lined tanks are most satisfactory for handling wax but heavily tinned iron or copper is good as long as the tin remains in place. Most rendering equipment is constructed of iron or galvanized iron; both of these metals tend to darken wax in color. Certain acids will remove at least part of these stains, but are not recommended for use by the average beekeeper, because they are dangerous to use and require both extra care and extra equipment.

Melting Tank

DRUMS OR tanks holding 55 gallons or more may be used. Provide steam through a pipe extending into the tank to within an inch or so of the bottom.



This new "Waxmaster" is another efficient means of rendering beeswax.



Commercial size home-made press with tank for accumulating rendered wax.

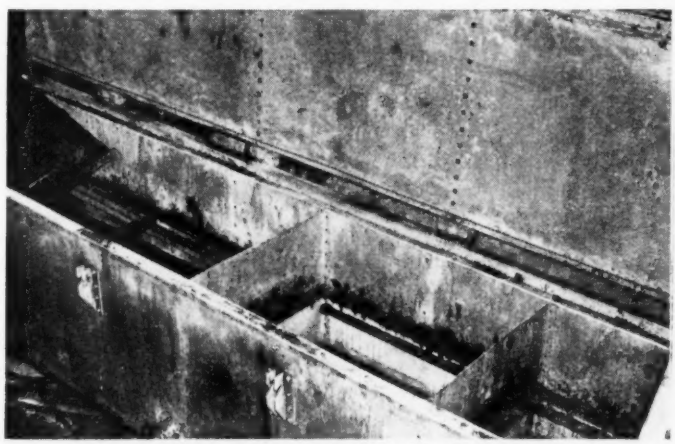
Melt cappings over ten or more gallons of steam-heated water. Remove floating particles by skimming with a piece of wire screen. Then dip the liquid wax directly into molds. Residue containing wax can be rendered immediately in a hot-water press or drained first over the melting tank. A wire cloth basket or one of perforated metal can be used for draining; empty it before the mass becomes hard.

Hot-Water Press

This is the most efficient equipment for removing practically all of the wax from any wax-bearing material. It may replace or follow other methods of rendering. A wax rendering press can be purchased or constructed or a cider press can be adapted for this purpose.

Pressure is used to force the wax from residue immersed in water kept hot by steam as in the melting tank. Alternately applying and releasing the pressure rinses out the wax. Residue after pressing should not be more than an inch or so thick and may retain less than one per cent wax. A thorough job usually takes several hours, but the time will vary according to the amount of pressure and the number of times it is applied and released.

USE ANY metal tank, preferably insulated on the outside, into which the frames may be hung as they are in



Large capacity steam chest built of aluminum.

a hive. Place a false bottom of perforated metal or hardware cloth covered with burlap two or three inches below the frames and at least four inches above the tank bottom. Fit one end of the tank with a gate and raise the other end slightly to facilitate draining. Provide a tight-fitting cover for the tank to prevent escape of steam.

For efficient commercial use, two steam chests holding about 50 frames each should be used so that one may be emptied and refilled while the other is in operation. Smaller chests may be constructed or some tank converted to fill the needs of any beekeeper.

To operate, fill the chest with frames, and inject low pressure steam **below** the false bottom. Leave the gate for draining open. A trickle of steam and liquid wax issuing from it indicates operating temperature has been reached. Fifteen to thirty minutes is enough to remove at least half of the wax. Then jar the frames quickly on the edge of the tank to dislodge the cocoons and remaining comb material. This residue accumulates on the false bottom and may be shoveled out for later rendering in a hot-water press.

Cappings may be placed on the false bottom for rendering in the steam chest, and the residue handled in the same manner as comb residue.

The Killions Score Again!

The Eugene E. Killions of Paris, Illinois, accept Silver trophies at National Honey Show, at St. Paul Minnesota. Mrs. Killion holds the G. B. Lewis trophy for tops in chunk honey and the A. I. Root trophy for comb honey. Master Killion is proud of the exhibit judged the most outstanding sample of honey at the National Honey Show. It was chunk honey. Eugene has a firm grip on the beautiful silver American Beekeeping Federation tray his chunk honey exhibit won.—Photo from C. D. Floyd, Minnesota.

Legume Pollination

By M. V. Smith, Department of Apiculture, Ontario Agricultural College

THE POLLINATION of legume flowers is as essential to the production of a good seed crop as land preparation, cultivation and weather conditions. Planned pollination means arranging to have enough insects in the field to get a maximum set of seed. It pays! Seed yields have been increased two, three, or even five times! The use of bees for pollination, however, is no guarantee that a seed crop will be produced, as quite often some other factor such as weather, harmful insects, or improper harvesting may interfere.

Why are insects such a vital factor in legume seed production? In most of our grain and grass crops, pollen is carried from one plant to another by the wind. But with the heavier pollen grains, and the concealed floral parts of the legume flowers, wind pollination is not possible, and visiting insects must be relied upon for pollen transfer. If insufficient insects are present to perform this task, seed production will suffer.

The necessity for pollen transfer may be effectively demonstrated by choosing a blossom in the early bud stage and covering it with a bag to prevent pollinating insects from gaining access to it. After the plant has matured, open the bag and look for seed. With such clovers as alsike, white Dutch, Ladino and red clover, which are highly self-sterile, it is unlikely that a single seed would be formed within the bag. A few seeds may be formed beneath bags placed over alfalfa or sweet clover blossoms since these plants are partially self-fertile. Certain legumes, including trefoil and crimson clover, are self-fertile and may be capable of producing a fair crop of seed without the aid of pollinating insects. Thus we see that for most legumes, pollinating insects are absolutely necessary before seed can be produced. And even in the case of the self-fertile legumes, substantial increases in seed yields have been obtained by providing bees for pollination.

Recommendations for the pollination of various legumes differ in some respects. Let us then consider in turn each of the more important legume crops.

Red Clover

CONTRARY TO POPULAR belief, honey bees are efficient pollinators of red clover. The depth of the corolla tube forces the honey bee to push well into the floret to obtain nectar, and in so doing it almost invariably comes in contact with the sexual parts and brings about cross-pollination. The effort required to enter the flower however, does considerably reduce the speed at which honey bees work on this crop.

A number of wild bees including bumblebees, short-tongued bees, and leaf-cutters are also effective pollinators of red clover. Of these, bumblebees are probably of the greatest value, although their numbers are subject to such variation from season to season that they cannot be relied upon to provide adequate pollination of this crop.

In seasons when other sources of bloom are abundant, honey bees may be attracted away from red clover. To help overcome this difficulty it is advisable to place colonies used for red clover pollination right in the field. Three colonies per acre should provide a satisfactory pollinating force if they are distributed throughout the fields in groups no more than 200 to 300 yards apart in each direction.

Alfalfa

ALFALFA IS one legume crop which honey bees have difficulty in pollinating due primarily to the structure of the flower. The sexual parts of the blossom are normally concealed beneath the lower keel petals and will spring up against the body of any insect attempting to push its way into the flower. This process is known as tripping. As a rule, tripping is necessary before pollination can take place.

The tripping mechanism springs up

rather violently and often catches the head or mouthparts of the honey bee in the flower, forcing the bee to struggle to free itself. As bees gain experience in working alfalfa they soon learn to enter the blossom from one side, and are able to obtain nectar without tripping the flower. This, of course, lowers their pollinating efficiency. Thus the fact that honey bees may appear to be working alfalfa flowers in considerable numbers does not necessarily mean that a high degree of pollination is being brought about.

Since pollinator counts indicate that honey bees comprise well over 90 per cent of the insects visiting alfalfa blossoms, it is probable that they do contribute to the seed set. However, because of their poor pollinating efficiency, coupled with other factors which are limiting the yield of alfalfa seed in Ontario, the rental of honey bee colonies for the pollination of this crop is not practical at the present time.

A considerable effort has been made to determine just how efficient the honey bee is at pollinating alfalfa in Ontario. Observations carried out at Ontario Agricultural College over a period of several years indicate that on an average only 76 blossoms are tripped out of every 10,000 visited by honey bees. Tripping is almost entirely accidental, and occurs as the bees walk over the blossoms or attempt to reach the nectar at the base of the flower. Apparently most of the tripping was done by young and inexperienced bees. In no case was a honey bee observed working alfalfa for pollen. Certain of the wild bees, such as some species of leaf-cutters and bumblebees, are much more efficient pollinators of alfalfa than is the honey bee. However, these insects are present in such small numbers that they cannot be considered as an important factor in alfalfa pollination in most parts of southern Ontario.

The above recommendations apply to Ontario conditions and should not be confused with reports originating from other areas. For example in parts of the western United States where considerable alfalfa seed is produced, the climate during most of the growing season is hot and dry, and crops are

Alsike Clover

grown almost entirely under irrigation. Under these conditions honey bees work alfalfa very intensively and may trip a much higher percentage of the blossoms than they do in Ontario. Western seed growers rent large numbers of honey bee colonies for alfalfa pollination and frequently use as many as five to seven colonies per acre. Exceedingly heavy seed yields, ranging up to 30 bushels per acre, have been reported from certain of these areas.

Alfalfa blossoms may be tripped to a certain extent by wind, rain, or other mechanical means. This has led some growers to go over their fields with some form of a drag in the belief that this might increase their seed set. While the actual number of blossoms tripped may be considerable, it should be borne in mind that mechanical tripping results in self rather than in cross-pollination, and only a relatively small number of the self-pollinated blossoms will produce seed. In addition, mechanical drags usually cause a certain amount of injury to the plants themselves with the result that this practice frequently causes a decrease rather than an increase in seed yields.

To sum up then, lack of pollination appears to be one factor limiting the

production of alfalfa seed in many parts of Ontario. Up until the present time, no practical method of overcoming this difficulty has been found.

Alsike

THIS CLOVER is a favorite source of both pollen and nectar for honey bees. They are efficient pollinators of this crop and work the blossoms fairly rapidly. Honey bees average 83 per cent of the total pollinator population on alsike fields in southern Ontario. Short tongued bees make up most of the balance of the wild pollinators. Very few bumblebees have been found working on alsike. Honey bees should be used at the rate of two to three colonies per acre for alsike pollination, and should be placed in or close to the field.

Sweet Clover

ALL VARIETIES of sweet clover are extremely attractive to honey bees and no trouble should be encountered in encouraging them to work this crop. In addition small wild bees and flies often visit sweet clover flowers in large numbers with the result that pollination is seldom a problem with this clover. Bumblebees are not too important as sweet clover pollinators.

Sweet clover blossoms are quite small and the honey bee is able to work them very rapidly. Nectar is the chief source of attraction, although pollen may be gathered as well. Two to three colonies per acre situated within easy flying range of the field (less than 1 mile) should ensure satisfactory pollination.

White Dutch Clover

The white Dutch blossom is very similar in size and shape to alsike and the same recommendations given for alsike will apply for this clover.

Ladino Clover

Ladino is fast gaining in popularity as a forage and pasture plant. While it is similar in structure to white Dutch clover, it has a considerably larger blossom and does not produce nearly as many blooms. Honey bees are efficient pollinators of this clover and should be placed in or beside the field at the rate of one colony per acre.

In some instances it may be necessary to control injurious insects by applying insecticides while legume crops are in bloom. Care should be taken to carry out such applications only in the morning or evening when honey bees are not active in the field. Poisonous materials should not be applied close to, or allowed to drift into, hive entrances. Insecticides applied in spray form are less toxic to honey bees than are dusts. D.D.T. and Toxaphene are the only insecticides recommended for use on legume crops which are being visited by honey bee pollinators.

General Recommendations

USE ONLY strong disease-free colonies for pollination purposes.

For legume crops place the colonies so the bees will tend to work into the prevailing winds.

Do not place bees out for pollination before the crop they are to pollinate is in bloom. Best results will be obtained if bees are moved into legume fields at about 20 to 30 per cent bloom.

If honey bees do not appear to be working the crop for which they were intended, replace them with colonies from another location.

Alfalfa and red clover frequently have a first cutting of hay removed, after which the second crop is left for seed. To enable these plants to send up a vigorous second growth and produce abundant bloom, the first cutting should be taken off not later than mid-June.

"Now how did that happen?"

New 4-H Projects Keep a'Buzzing

By Elmo Hester, Atlanta Journal Farm Editor

Parents of the 4-H'ers advise them on harvesting their honey. Left to right: Owen Duvall, John Young, David Duval, Marvin Young.

PROJECT WORK is literally buzzing for eight Greene County, Georgia, 4-H Club boys.

Their bee projects have been so successful this spring, in what has been considered only a "fair" year for honey, that the 4-H'ers are planning now to package their product under a 4-H label when the volume increases.

Most of the hives which the 4-H Club boys got early this year already have paid for themselves with the honey produced and the boys will have the bees for use next year. Their fathers or neighbors, too, have benefitted by the increased seed yields resulting from the extra pollination.

County Agent Henry Rikard figures the 4-H'ers spend less time tending their bee projects than any other for the money returned.

THE 4-H'ERS here are among several counties getting bees under an experimental Sears Roebuck Foundation chain plan, according to W. E. Neville, bee culture specialist for the University of Georgia Agricultural Extension Service. The chain also is operating in Jasper, Clarke and Elbert Counties.

The boys are finding a ready market for their honey, some even selling it from the frame. But Mr. Rikard and the 4-H'ers realize that as the projects grow, more emphasis will have to be placed on marketing so they have ordered jars so the boys can pack their own honey.

The Greene County freezer-locker is obtaining an extractor to remove the honey from the combs. The vocational agricultural teacher, Ford Boston, is cooperating in the project, Mr. Rikard said.

Another 4-H'er, 10-year-old John Marvin Young, helps his father tend to 10 hives. Mr. Young attests to the value of bees in pollinating a crimson clover crop. He made 175 pounds of seed on 6.1 acres in 1951 and last year harvested 2,444 from the same field and didn't get all the seed. Yields were one-third more near the hive than in the middle of the field and one-third more in the middle than at the far side of the field from where the beehives were located. The bees paid for themselves with honey, he said, and the extra clover seed yields were profits for having them.

One 12-year-old 4-H'er, David Duval of the Woodville Club, already has repaid the cost of his hive of bees and

Wesley Edwards, 16, checks the honey.

he saved 25 pounds of honey for use at home. The hive of bees and transportation cost $16.25 and he's sold more than $18 worth in his community. His father, the Rev. Owen Duval, is a club adviser and works with several of the 4-H'ers in their bee projects.

The eight Greene County 4-H'ers—only five are in the chain—have from one to eight hives each. Together they have 21 hives.

WESLEY EDWARDS, 16, a Union Point 4-H'er, bought four more hives when he found he was to get one of the chain hives. His bees arrived March 30 and he expects to "harvest" an average of 40 pounds per hive and the honey sells for 30 cents a pound. The rains and the late cool weather made 1953 a "poor" honey year on his farm.

But Wesley, son of Mr. and Mrs. G. A. Edwards, has benefitted more than by the honey and the pollination job which the bees performed for his father's clover. To work with bees effectively, he had to learn the life cycle of insects. This knowledge was useful in his science classes.

The project takes very little time, Mr. Rikard said. Equipped with a "smoker" and a veil (and sometimes wearing a second suit of clothing) the 4-H'ers need only to take the honey from the hives and inspect the hives once a week during the honey flow season to prevent swarming.

Moving Bees to Nebraska

By C. J. Walstrom, State Apiarist, Lincoln, Nebraska

RECENTLY A BEEKEEPER from Kansas City, Missouri was arrested and fined in a Geneva Court for the illegal entry of bees into Nebraska. This beekeeper failed to provide a health certificate from Kansas authorities showing the bees were free of highly contagious bee diseases. He also failed to secure a Nebraska permit before entering.

Any beekeeper, dealer, firm or organization who desires to move into Nebraska any colonies of bees or used equipment shall notify the State Apiary Inspector of his intentions by providing the following information at least ten days prior to the entering of such material:

1. A copy of a valid certificate of inspection signed by the entomologist, apiary inspector, or other responsible official of state of origin.
2. A list of proposed beeyard locations where colonies can be inspected in the state.

Return to Europe

By R. B. Willson
New York City, N. Y.

Photos supplied by R. W. Willson

An outside view of the building where the famous Benedictine is made in Fecamp, France.

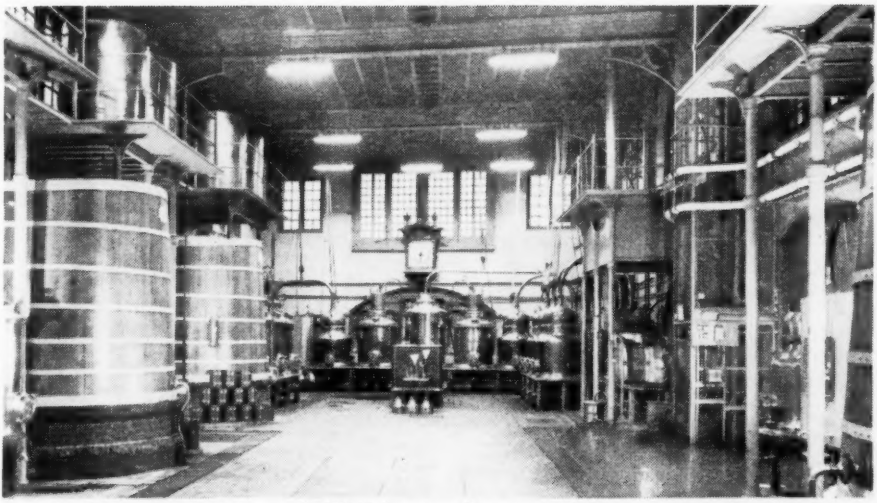
Part I

SETTING OUT for Europe in the summer of 1953 was quite a different matter than when I went over in 1949. Then I was hopeful, but not too confident, that some day trading in American honey would be resumed, but the ravages of war were still everywhere present, and the twin curses to trade were already generally well set: (1) No convertibility of the monies of European countries for our dollars except by the consent of their governments, and (2) no importation of goods from America, or elsewhere, except by government license. E.C.A. was just getting underway and it was soon made apparent that none of their funds could be used to buy honey.

The barriers to trade made a dismal outlook in 1949 but from April 1, 1952 to March 31, 1953, a total of approximately 32,000,000 pounds had been exported from our country under the second year of a U. S. Export Subsidy Program for honey even though the restrictions of conversion and the requirements of license were still in effect. That a subsidy should have been granted for honey was a great tribute to the importance of American beekeeping and the volume purchased abroad was proof of the high regard with which Europeans hold honey as a commodity, especially that which is produced in our land. It was going to be interesting to return to Europe where with the generous aid of Uncle Sam we had, with the exception of Britain and the Scandinavian countries, reestablished our export honey market.

This time I was accompanied by my wife who was to be my invaluable aid with her fluent French and German. We left New York on June 11th and had the good fortune of passage on the famous French Line boat, the Ile de France, where every meal is an exciting adventure, and where the personnel seem determined to make everyone enjoy the voyage to the utmost. Calm seas brought us into Le Havre on the sixth day, where we were met by our French agents, Messrs. Jean Le Coq and Robert Le Fur.

During the past year we had shipped considerable honey to France, one fairly large lot for the manufacture of a product that probably, in all the world, is the best known of all made with honey, namely Benedictine. Visiting these people and their remarkable plant in Fecamp, a small city on the North Sea, and learning something of their history proved to be one of the highlights of the entire trip.



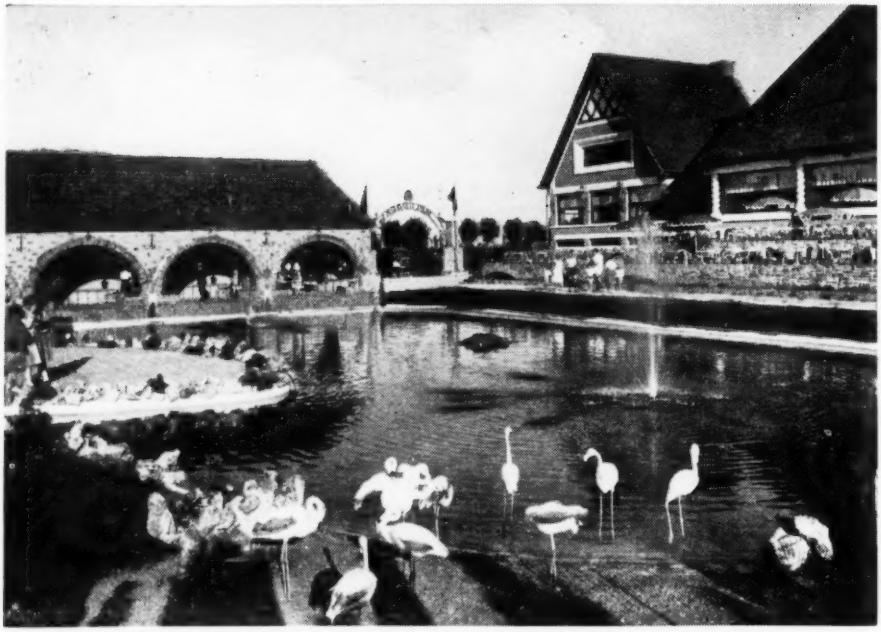
Here is where the herbs are distilled to give the world famous Benedictine its flavor. Honey later is added as an important ingredient.

Benedictine is a liqueur that was being made in a monastery of the Benedictine Order of Monks in Fecamp up to the time of the French Revolution. The monastery was destroyed during the Revolution, and not until 1862 was the formula, recorded on parchment in the XVI century by the monk Don Bernardo Vincelli, found by M. Alexandre Le Grand amongst some old documents that had been entrusted to his ancestors for safe keeping at the time of the Revolution. The formula, listing the ingredients, but with no detail as to amounts, required much work to perfect, but M. Le Grand did so and set about to make Benedictine again and build a magnificent plant, combination of architecturally imposing museum and factor as befitting such a famous product.

Herbs that grow in the area: hyssop, bee balm, mint, and angelica, plus honey give this product its delightful flavor. It was a source of great pride to find our American honey being used in a product that was being shipped to 138 countries of the world. Vive la subsidee d'export!

After two days in Paris we were off to Antwerp, in Belgium, first country in Europe to resume buying our American honey after the war. The Lusts, big people (Mr. Lust has been our agent for Belgium), are also big in kindness, good humor, and industriousness. They had been to America, separately, since 1949, and now he was about to revolutionize the distribution of honey in his country. Up until now the glass container in which one buys honey in Belgium is returnable. Storekeepers accumulate them for the next visit of his supplier. Mr. Lust decided to put the American system into effect, new glass for every pack, and found the merchants immediately agreeable. No more bother of taking back empty glass! A few pennies more perhaps, but then time is money and it takes time to take back glass, store it, account for it, and so maybe there is no saving at all. I look for other European countries to follow suit.

In all of my travels I have never seen anything even remotely approaching the spectacular success that has attended the merchandizing methods of Mr. A. J. Florizoone of Adinkerke, for selling honey. Four years ago, when I first visited him, he already had a small park where he provided free, umbrella-covered tables for people to come and eat their lunch. He sold refreshments, and had a bear in a cage, and a large privet labyrinth where youngsters could "get lost". But the principal lure was a moving picture hall where movies about bees were shown and outside of that a most



Meli-Park of A. J. Florizoone, Belgium's leading honey merchant.

tempting display of honey, and honey pots, with pretty girls doing the selling.

Now, four years later, he still shows the movies, and he sells honey—more than ever, but in addition, he has a magnificent restaurant—like a kingly dining hall—where he has excellent music by orchestra and organ; he has a great parking lot to accommodate hundreds of cars; there is a miniature golf course, now enjoying much popularity in Europe; and a zoo which includes one of the world's finest collections of living birds from every continent. They are in a beautifully landscaped area he calls Meli Park where he has open pools for his wading birds and water birds, and dozens of large wired enclosures for his exotic birds, many of which are of brilliant plumage. Admission is charged to the park and so fine is it all that from every part of Belgium every day come busloads of children from their schools, at greatly reduced rates of admission, that they may enhance their education by a visit to a place so bulging with instruction. Of course, they see the movies about bees and are told about honey. It is no wonder that he has the finest honey business in Belgium.

Three days was far too little time to visit Belgium, but we did manage to get about and see Ghent, Ostend, and Brussels, and in Antwerp inspect Mr. Lust's new packing equipment that is as fine and as modern as money can buy. So off by train to the Netherlands where economic conditions had been steadily improving in the past few years after a slow post-war start, terribly accentuated for Holland by the loss of the Dutch East Indies.

Between April 1, 1952 and March 31, 1953 Holland had imported from the United States approximately five million pounds of honey. Most of it had been reexported by the Dutch importers to Germany. One of those importers related this story. It seems as though because of favorable trade balances the German government would permit its importers to buy honey freely from Holland provided it was of Dutch origin. Holland importers went to the Netherlands Chamber of Commerce asking that if they were to bring in foreign honey, since they have very little of their own, and mix it with theirs, whether they could then ship it to Germany as Dutch. The answer was yes, and since

The author, left, Mme Le Coq, Mrs. Willson, and M. Pierre Le Grand, a junior director of Benedictine.

that organization is semi-official in nature, it was tantamount to approval. Suddenly thereafter huge orders went to the United States for our honey, paid for in dollars, shipped to Holland, thence to Dutch warehouses, "mixed", and then on to Germany. Yankees are not the only resourceful traders!

It is characteristic, and I think unfortunately, that we Americans think we do everything bigger and better than anyone else, and selling honey is no exception. A trip to Europe dispels this idea and a convincing example is in the merchandizing methods of Beefarm Mellona Ltd. of Santpoort in Holland. This business, exclusively honey, is owned and operated by the young honey king of the Netherlands, Mr. Johan de Meza, who inherited this business last year on the death of his father who had distinguished himself for many years as the leader of the bee and honey business of his country.

The cover of the booklet sent out by Mellona, Ltd.

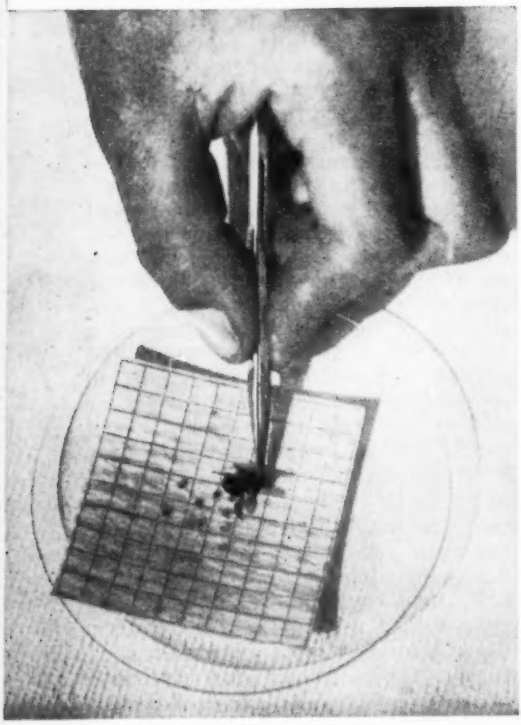
The son has carried on the business with great vigor, doing almost all of the package honey business of Holland by virtue of his highly attractive advertising and display material worked out by his clever young associate, Mr. Coan Hamers. Unfortunately an article of this nature does not permit the illustrating of their work, but a reproduction of the hard cover alone of a booklet 6½ x 5 inches, 23 pages, and printed in five colors, which goes to anyone for a label off a honey jar and a few cents to cover costs, and which tells in fascinating fashion for little children the story of the gathering of honey by the bees and the virtue of eating honey, will give an idea of their aggressive and original approach to marketing. This pair are not much older than boys yet they have already gone a long way and will go further. Their continued success means a good steady export outlet for American honey irrespective of export subsidies.

(to be continued)

No. 1.

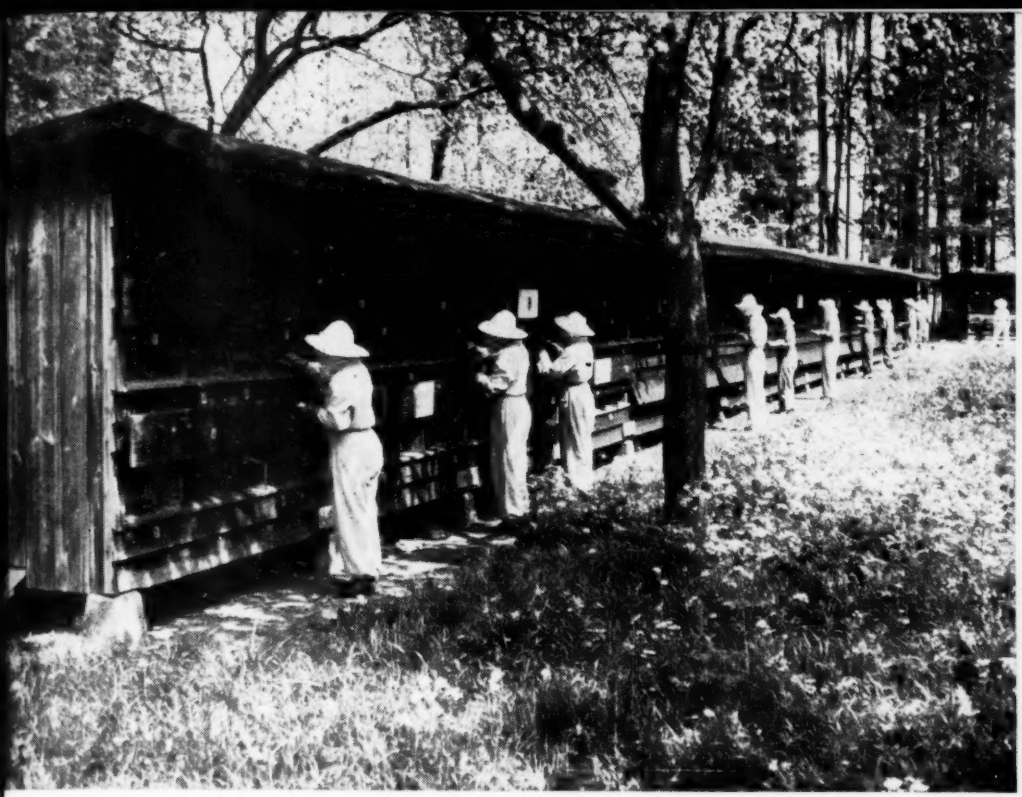
Bees Bat

No. 1. Honey and wax are only by-products of one of Europe's biggest bee farms, operated by the Mack Producers of Bee Venom at Illertissen, Bavaria, Germany. Bee Venom, used mainly to combat rheumatism, is produced by the farm's 1,000 bee hives, each of which houses between 60.000 and 70,000 bees. The farm's annual production of venom is only about 33 pounds since a bee ejects only about 0.3 milligrams with each sting. The venom, gathered by women, is sealed into glass vials at the farm's own laboratory. Here, protected by sting-proof clothing, this group of women workers is on its way to the hives to gather venom.



No. 3. Here is a close-up view of the daily work which goes on at the Mack Bee Farm. The bee caught with pincers is pressed onto a special sheet and ejects its sting into one of the squares. A good worker can gather up to 9,000 stings a day. The average output is 6,000 per worker.

No. 3.



No. 2.

Batheumatism

No. 2. Here women workers are shown standing at the hives extracting bee venom which is sold by the farm for fighting rheumatism. The women catch the bees with pincers and press them on a prepared rubber-like sheet. The bee stings into the sheet, ejecting venom.

No. 4. Here the sheets studded with bee stings are placed into a special liquid which extracts the venom.—Wide World Photos.

No. 4.

The BEES of KILIATOS

(Continued from October)

[Victor R. Stephen, who has illustrated the first and second part of this story, is an artist who has done a lot of illustrating for national magazines such as the NEW YORKER. At present he is the Publications Production Manager at Cornell University where he is responsible for the illustrating and layout of all agricultural publications.

Stephen is a newcomer to Gleanings although he produced the drawings for our editorial page and our new monthly column "Bee Facts". We are proud to have him illustrate our manuscripts, and readers can expect to see more work from him in the future.—The Editors.]

"A COUPLE of months later I went away to Ohio State University, which was a hundred and fifty miles from our farm, far enough, I thought, to rid me of the terror of the bees." He had been looking into his coffee cup, but now he turned his dark glasses full on me. "Three weeks after school started, I was sitting in a French class—I can still remember the moment; some one was reading aloud from 'Tartarin de Tarascon'—when I happened to glance toward the window. My heart seemed to stop beating. Bathed in sunlight on the sill were two of our Cyprians."

My face must have registered some doubt, because he said, "There was no questioning that they were Kiliatos Cyprians. I can identify them as easily as you could me in a pack of Hottentots. I got my first sting the next day, and then it was the same nightmare over again. The Furies were after me."

He swallowed some coffee. "What saved me from going mad was the winters. The population of a bee colony is drastically reduced in winter, and the bees stay pretty much within the hive. My bees were sufficiently active to keep me aware of their interest, but I did have some breathing spells. It was during that first winter that I figured out what it was all about."

"Did the bees sense that you were an enemy after you helped destroy their colonies?" I asked.

"No," he said. "Nothing like that. You've been exposed to too much romantic hogwash about the intelligent bee and its amazing microcosm, so perfectly organized that man would do well to study it. Hogwash! The bee is stupid and almost inflexible. The amazing microcosm is the result of eons of trial and error. The bee doesn't know why it performs its many functions. It knows only to perform or perish. You can leave a plate of nectar next to the hive, and the workers will still sally forth to bring it bit by bit from flowers in distant fields, because that is their habit.

"Eventually, they learn, if it's something to do with their survival. If they hadn't learned, they'd be out, like the dodo and the dinosaur. They learned to kill the drones when the drones were no longer needed, so they could keep their reserve honey. They learned to report nectar finds to their hives by the circling dance and the wagging dance, and by the positioning of their bodies in relation to the sun and the nectar. They learned how to kill marauders at the entrance to the hive. They learned slowly about everything they do, and eventually learned about us Kiliatos.

"I can only guess wildly at the number of years my direct ancestors have gathered honey. A thousand? Two thousand? Three thousand? All conceivable, and possibly conservative. A thousand generations of queens, fifteen thousand sets of workers. It took that long for the one family of bees to discover that one family of men was systematically robbing them of honey. How long they've known, exactly, and how recently they learned what to do about it, is impossible to say. There are no family records. What clue of sight or smell distinguishes a Kiliatos to them, I don't know, any more than I know how a bee finds nectar, or distinguishes his hive mates. The same patience and ingenuity that Von Frisch exercised in his experiments might reveal what new dance had to be devised to enable the scouts to communicate

the location of a Kiliatos. What difference does it make, really? It concerns only me, and I don't care to find out.

"There is no point in torturing us both with a detailed history of these last few years. When I was in my Junior year at Ohio State, my father died in Pittsburgh, of injuries he received in an automobile accident, and I transferred to the University of Wisconsin. It took the bees more than a month to find me. In subsequent moves their time was cut. The bees didn't get any smarter. Quite simply, bees can't travel without establishing new colonies. Thanks to the fear that drove me from place to place, there are now Cyprian colonies within a couple of days flying time no matter where I settle in this country. I have had six years of hell, of living furtively by night, of moving again and again. At one time I thought the Army might be my salvation, but I was turned down. I can't blame the Army. I was a trembling wreck until a few weeks ago. I can speak lucidly to you only because the end is finally in sight."

He ran a gloved hand nervously through his hair. "The solution came to light when my mother died, two months ago. The bees had never attacked her. She had stayed on at the farm, and she never really understood what had happened to her family. The farm was debt-ridden at the end. I had never made more than enough money to keep myself alive. The sale of the farm barely covered my mother's burial expenses, with a few dollars over, but her will revealed one asset that I had forgotten, a small island about forty miles off this coast, which she had inherited from her father. I had visited it as a youth, and remembered it as little more than a dot but capable of supporting life.

"I came here two weeks ago and hired a private seaplane to take me to the island. It was all I hoped for. It is small, but the soil is good and will grow what I need. Rainfall is adequate. There is a sturdy cabin. No one has set foot ashore for years. It is Eden for a man escaping bees. No bee, not even my Cyprians, can fly 40 miles over open water.

"Here is my plan. Tomorrow morning I will fly to the island with all the supplies my meager finances allow: a cot, a chair, oil lamp and candles, some books and writing paper, a stove and cooking utensils, plenty of food, and agricultural implements and seed. I am a skilled farmer. The food I bring will sustain me until I have a crop, and then will supplement what I grow. I am preparing for a three-year stay, and I want no contact with the mainland in that time. I'm giving the Cyprians no chance to hop a ride. After the pilot unloads my equipment, he will draw a curtain around the island by flying over it and dusting it thoroughly with DDT. The last of my money is on deposit with the company whose airplane I have rented, to assure their sending a plane for me in three years."

"Why three years?" I asked.

"Because in three years there will be a complete turnover in the colonies that know me, including the queens, and a hiatus in the practice of the dance by which they tell the location of a Kiliatos. When I return to the mainland there will be no Kiliatos Cyprian alive that has ever seen the dance, and I will be free."

"And you trust the company to send an airplane for you?" I asked.

"If one can't trust one's own species . . ." He shrugged.

A few minutes later we separated. He extended a gloved hand and I wished him luck. In the morning, when my friend and I were casting off, a seaplane flashed over us and out to sea. That was two years ago. I never saw George Kiliatos again.

The piece in the paper carried a Savannah dateline and the head, "Corpse Found On Isle." It read:

> An apparent attempt to emulate Robinson Crusoe has ended in tragedy, according to Robert Gellin of New York City, the captain of the pleasure craft, Tigris II. Gellin told Savannah police that he and his passengers, Donald Breck and Roy Sanderson, also of New York, discovered a man, dead a week or more, on an island some miles off the coast. The location of the island is not immediately clear, as the Tigris II had come upon it while off course and lost.
>
> Gellin said there were indications that the lone occupant of the island had lived there for some time. An area had been cleared and had apparently been under cultivation at one time. A cabin was well-stocked with tools, a stove, and simple furniture, but no food. The body was found on a cot in the cabin, with the head and shoulders partly out of a window. Gellin believes the man starved to death.

He said there were signs that the man might have chewed bark during his last days. On the field once under cultivation, the word "HELP" had been scratched in six-foot letters, in an apparent attempt to attract planes. Underneath, more uncertainly, "BEES—I WANT BEES" had been scratched and elsewhere, almost illegibly, "BEES BEES BEES". There was no immediate explanation for the latter two inscriptions. A social security card on the body bore the name George Kiliatos. Local and federal authorities hope to locate the island today, with Gellin's help.

I was horrified, and completely bewildered. Why would Kiliatos cry out for bees? It made no sense. I might have sat there for an hour, searching my mind for an explanation, but my wife interrupted and thrust it on me. "It's getting late," she said. "You'd better hurry if you're going to catch your train."

I looked at my watch. It was late. I threw the paper on the table, grabbed my hat and coat from the hall closet, kissed my wife hurriedly, and started for the door, but my wife called me back.

"Here's a list of what I want from town," she said, dropping the slip of paper into my coat pocket as I opened the door. "Don't forget anything and please stop at Max Schling's first for the seeds. I'd like to start the garden this week."

It hit me immediately, before I had closed the door. The answer, of course, was in the seeds. Kiliatos had been so confident of his capabilities as a farmer, or had budgeted himself so carefully, that he had brought seeds for only one season's crop. He had expected each harvest to provide the next season's seeds.

But he hadn't forseen that the DDT would kill the island's insect life, and that his first crop had been his only crop. He had found out too late that his plants were sterile. Without the pollenization provided by insects, there had been no fertilization and no seed production. During his second year in the island, he had been forced to live on the food he had brought with him; and without help from his own crops, he had consumed it all. Some time before that he had certainly remembered that huge orchards, when they destroy nature's balance by dusting their crops, are careful to restore it again by employing mobile beekeepers. In his last, desperately hungry days, his mind must finally have given way and imagined his mortal enemies, the bees vengefully withholding their services. At the end he had probably lain on his cot, too weak to move, waiting for a sign from the sky; not the roar from a plane's motor, but the sting of a Cyprian, and the promise of life that went with it.

Trends in Honey Packing Plants, Equipment, and Methods

By Dr. E. J. Dyce, Cornell University, Ithaca, N. Y.

Part II

(Continued from October)

A HEATING process consisting of two steps is becoming increasingly popular. The honey is first warmed to about 120°F. and then strained to remove wax particles. The removal of wax before it liquefies reduces the possibility of honey picking up a waxy flavor. Some packers are using an O.A.C. strainer or a strainer of equal efficiency and capacity for this preliminary straining.

The honey is then heated to 160°F., preferably in some good type of flash heater. One common method is to run the honey through coils of pipe immersed in hot water. By controlling the temperature of the water in the tank and the flow rate of honey through the coils, good heating results are possible.

Honey is a poor conductor of heat, and it is always difficult to heat it in the center of a large pipe. Some packers pump the honey simultaneously through three 50-foot lengths of ½-inch pipe. In small plants this plan provides ample capacity without using a water temperature that is too high. Flash heaters which flatten out the honey and heat it in relatively thin layers are the most efficient.

It is much safer and more economical to use a flash heater than a large tank for heating honey. This plan permits reducing the temperature of the honey as it flows from the heater through an efficient cooler. Some packers run the honey through coils of pipe immersed in water to cool it. It is not too difficult to lower the temperature of the honey to about 120°F. in such a unit, but to reduce it below this temperature becomes increasingly difficult.

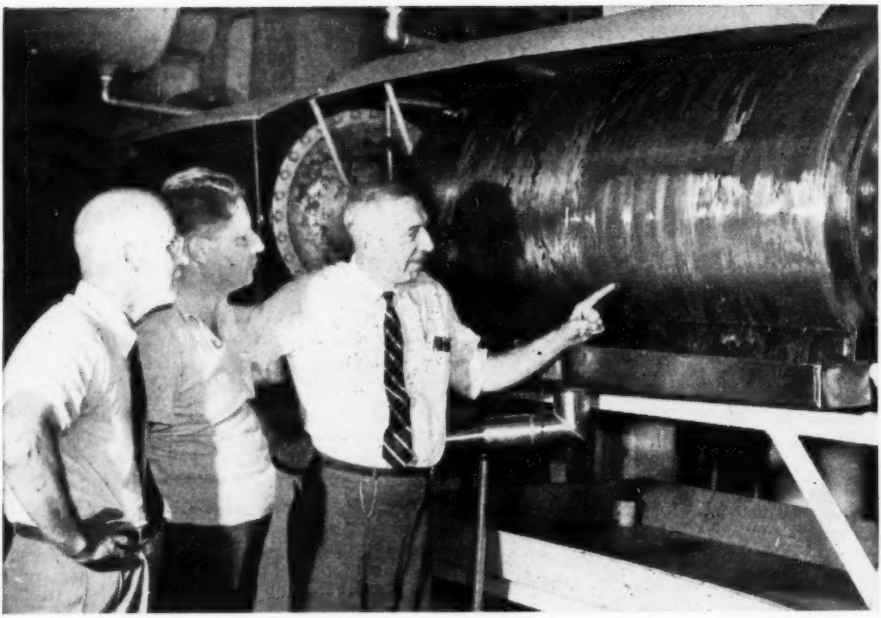
Large tanks even when glass-lined and provided with double jackets and agitators are seldom satisfactory for heating honey to the final temperature. Too much heat damage is likely to occur in these tanks unless some method is used to quickly cool the entire batch. It is not only the temperature but also the length of time it is held at a high temperature, that causes damage to honey.

IT IS well known that when honey is cooled it becomes viscous, and the more it is cooled the more viscous it becomes. When honey is cooled in coils immersed in cold water, the honey lying next to the cold inner walls of the pipe forms a thick insulating layer. This layer greatly reduces the speed of cooling. If a refrigerant or very cold water is used this layer of cold honey may become so thick that it greatly reduces the transfer of heat and the efficiency of the equipment. For this reason coils of pipe are not very satisfactory as cooling units.

Equipment is available which is designed to remove this cold viscous layer of honey as it is formed. Large cooling rolls such as are used in the lard industry, which picks up the honey on one side of the roll as it turns, cools it and scrapes it off on the other side, preferably below the surface of the honey, are very efficient. Such rolls have been giving satisfactory service for years in at least three large honey packing plants.

One or two rolls depending on their size are normally installed directly above yet in direct contact with the honey in the tank. As the honey is cooled, removed, and is slowly mixed back into the tank of warm honey the entire batch is gradually reduced in temperature. The rolls should be turned slowly enough to avoid the incorporation of air into the honey.

Cooling units built on the principle of an ice cream freezer are good, providing the scrapers are built accurately enough to remove the viscous honey, and are turned slowly enough to avoid the incorporation of air. A few coolers on this principle have been carelessly manufactured for honey and they are not satisfactory.



Mr. Tom Shield, General Manager of the Ontario Honey Producers' Co-op., Toronto, Canada, explains the make-up of the cooling roll to the author, Dr. E. J. Dyce, left, and Mr. F. A. Anderson (center), president of the Ontario Beekeepers' Association.

Recently there has appeared on the market a relatively small but highly efficient unit for cooling viscous materials. It is completely enclosed and is designed to fit in a pipe line of a continuous flow process. We have not as yet had an opportunity to test this equipment but we see no reason why it should not be completely satisfactory for cooling honey. The unit is made of stainless steel and may be the best one to use even though it is expensive.

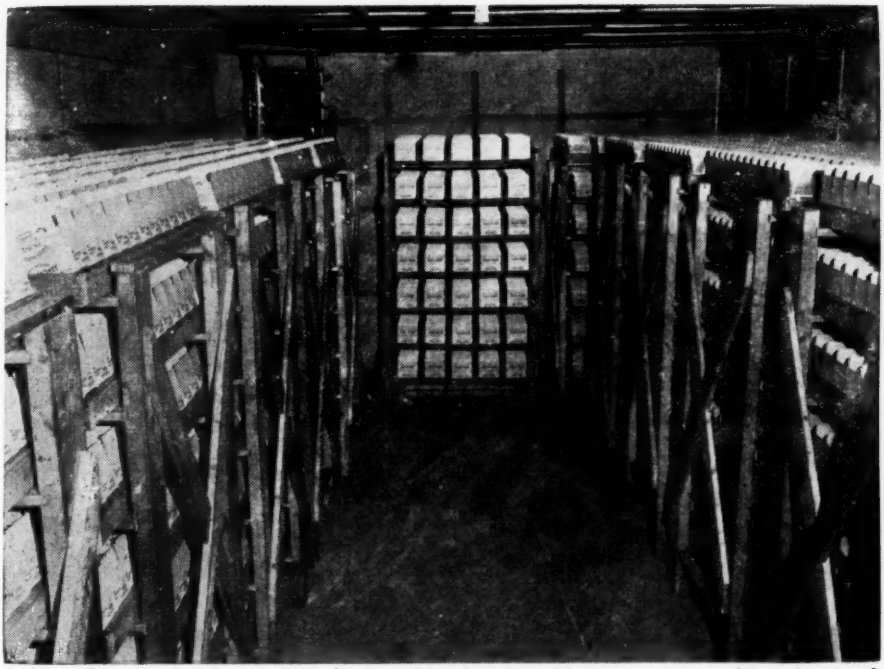
Several honey plants use a dairy coil vat equipped with a horizontal revolving coil of pipe. Vats with coils installed on a vertical axis are not satisfactory for honey. Cold water is passed through the coil and this cools the honey as the coil revolves. This equipment is relatively inexpensive, but it is not as efficient as a cooling roll or the ice cream freezer type of cooling unit. Some of the viscous layer of honey is rubbed off by the action of the coil turning in the honey, but too much of the cold honey remains on the coils for rapid cooling.

Honey is normally given its final straining between the time it is heated and cooled. Various types of strainers are in operation, but if a closed system of heating and cooling honey is used, large in-line strainers will give the best results.

It is advisable to install two in-line strainers in parallel. This will permit switching from one strainer to the other in case one becomes plugged.

For the final straining a material should be used which is at least equivalent to a wire screen which has 100 meshes to the inch. It is not difficult to strain hot honey through a wire screen with even 200 meshes to the inch if the honey is relatively free of foreign particles. Such screens are readily available and are not very expensive.

Wire strainers are preferable to cloth since the openings are not so likely to become stretched and enlarged. The efficiency of any strainer depends on the size of its largest opening. Many packers make the mistake of using strainers which are too small. It is always best to use a strainer which is considerably larger than actually needed for an average batch of honey. This will eliminate the work of cleaning the strainer when a batch



J. F. Anderson, of Oshawa, Ontario, has this electric cold storage room with a batch of honey bricks now setting under controlled temperature of 50 to 55°. See page 687.

of honey containing an unusually large amount of foreign material is encountered.

Care should be taken to prevent melted beeswax from being deposited on wire cloth strainers. In cleaning strainers used to strain honey below the temperature of the melting point of beeswax, it is a good plan to let the strainer soak in cool water to remove most of the honey. Never use hot water as this will melt the wax and cause it to adhere to the screens. Should the strainer become plugged with wax a suitable solvent or steam under pressure will have to be used to clean it.

In the food packing industry there is a definite trend toward using equipment made of stainless steel and glass. These are also the best materials to use for honey packing equipment. Tinned copper and aluminum, however, do not appear to react very much with honey. Copper and especially iron should be avoided. There are a few good acid proof paints and lacquers on the market which do not appear to react with honey. One of these materials should be used to cover metals which react with honey.

If the honey is not cooled before it is run into bottles, some method of cooling the honey, such as spraying the bottles with cool water or directing a cold air blast on them, should be used. This will prevent "stack burn" which is the result of packing honey that is too hot and making large piles of the filled cartons. It may take two or three days for the hot honey in the center of a pile to reach room temperature and as a result considerable damage to the honey may take place.

Value of Filtering

FILTRATION OF honey is highly controversial subjects. Much of the honey packed for the liquid trade in this country is filtered and the practice is on the increase. Honey that is properly filtered will remain liquid longer than unfiltered honey and it is, of course, more transparent. Most packers will tell you that they dislike filtering but competition forced them to do it. Some critics of filtration use

(Continued on page 701)

Come Over for Coffee

Mrs. Benj. Nielsen
Aurora, Nebraska

Honey bran spice cookies. —Photo courtesy Kellogg Co.

THE PHONE rings and it's, "Come over for coffee." Fun! And good eating ahead. There's no easier way to induce folks to begin using honey in cooking than to introduce honey goodies at coffee time. One of the nicest of the many nice rewards of baking with honey is the splendid fresh-keeping quality of pastries. So, that if you make a habit of baking with honey, you can have a coffee on the spur of the moment and rest assured your goodies will be fresh tasting and actually improved by a bit of aging.

If folks are a bit dubious about experimenting with honey in the cooking field, cream puffs are an excellent way to provide an entering wedge. True there is no honey in the puff itself, but honey added to the whipped cream filling gives a subtle intriguing flavor. Old-fashioned cornstarch pudding or blanc-mange made with honey is ideal if there is no whipping cream on hand.

For the times when you would like to be a bit festive here's a fruity good-for-you honey frozen treat:

Honey Fruit Sherbet

One can (14½ oz.) evaporated milk, ⅔ can fresh frozen lemonade, undiluted, 1 ripe banana, mashed, 15 maraschino cherries, chopped fine, and ¼ cup honey.

Chill evaporated milk thoroughly. Chill bowl and beater. Beat evaporated milk to the consistency of whipped cream, beating honey in gradually. Stir in lemonade, banana, and cherries. Beat and freeze. No further mixing is necessary during freezing.

Honey Bran Spice Cookies

One and one-third cups sifted flour, 1 teaspoon baking powder, ½ teaspoon salt, ⅛ teaspoon cloves, 1 teaspoon cinnamon, ½ cup butter, ¾ cup honey, 1 egg, 1 cup ready to eat bran, and 1 cup raisins.

Sift together flour, baking powder, soda, salt, and spices. Blend butter and honey; add egg and beat well. Stir, in sifted dry ingredients, bran, and raisins. Drop by teaspoonfuls, about 2½ inches apart onto lightly greased baking sheets. Bake in moderate oven, 350 degrees F., about 15 minutes. Yield: 3 dozen cookies, 2¼ inches in diameter.

Honey Drop Cookies

One-third cup shortening, ½ cup honey, 2 eggs, well-beaten, ½ cup sour cream, 1¾ cups sifted flour, 1 teaspoon baking powder, ¼ teaspoon salt, ½ teaspoon soda, ½ cup chopped nutmeats, ½ cup chopped dates, ½ teaspoon nutmeg or 1 teaspoon vanilla, and 1 cup rice cereal.

Blend shortening and honey. Add eggs and cream. Sift flour with baking powder, salt, and soda; add to first mixture. Stir in nutmeats, dates, flavoring, and rice cereal. Drop by teaspoonfuls onto lightly greased baking sheets. Bake in moderate oven, 375 degrees F., about 20 minutes. Yield: 2 dozen cookies (4 inches in diameter.)

Honey Date Bars

Three eggs, 1 cup honey, 1⅓ cups sifted flour, 1 teaspoon baking powder, ¼ teaspoon salt, 1½ cups pitted, sliced dates, 1 cup chopped nutmeats, and 1 teaspoon vanilla.

Beat eggs until light and fluffy, adding nut meats gradually. Sift in flour, baking powder, and salt which have been sifted together. Mix well, then add dates, nutmeats, and vanilla. Beat well. Pour into 9x13 inch pan lined with waxed paper. Bake in moderate oven, 350 degrees F. about 30 minutes. While warm, cut in 1x4 inch bars; roll in confectioners' sugar. Makes 2 dozen bars.

Live and Learn

By Propolis Pete

DURING THE past month, I have talked to quite a few beekeepers who keep their colonies in this general neighborhood, and they all agree that the crop of honey this year was punk, so far as quantity is concerned. Thank goodness the quality was superb. Some of them had talked with beekeepers from a wider radius and it would appear that the short production was pretty general all over this whole section of the country. Too bad. It must be an awful kick in the pants when you are depending on your honey production for all or part of your living.

The potato crop is big, but the prices are so low that the farmers aren't making much more than the cost of production. That's a horse from a different garage though, because I can't help remembering the years when they cleared a thousand bucks an acre and still cried because they didn't make more. Any of my potato planting friends who didn't get rich, please excuse.

I take only the spring and early summer honey. So my production generally is lower than it could be if I wanted to scrape the combs. It's a good thing that I didn't this year, because the goldenrod also was a complete flop. Ordinarily when the bees are working the goldenrod, the stink is terrific, but this year I smelled it only once. I was beginning to get concerned about what they were going to use for stores, when the asters came on. Thank goodness, the flow is heavy, and the hives at this writing seem to be heading for adequate winter stores.

Last winter, when I packed, I tried out putting some dry sugar on the inner cover of some of the hives, leaving the closing block off. This worked so well, that I am going to try it again, with refinements. During the summer I made some trays, about one and one-half inches deep and put a two inch hole in the middle for the bees to pass through. This should hold ten or twelve pounds of dry sugar, and I am going to put it on in place of the inner cover. The inner cover is going on over that. Then I am going to fold over three or four old burlap bags for insulation, with the tar-paper wrap folded over the whole thing. When everything is finished for 1953, some of my hives may be light in spite of the good aster flow, and I feel pretty sure that this will take care of them. Anyway, I'll let you know next spring.

THE PAST few years, we have had such mild winters that I am getting a little concerned about the law of averages. The mild winters probably helped some, but they hurt, too, because most of my colonies started to rear brood so early that they had their stores all used up by the time that they should have been getting into peak production. If we do have a hard winter, at least I'll have the satisfaction of knowing that I did all that I could. Old "Farmer Jones", our local weather expert, tells me that we are going to have a ring-tailed dad-blasted humdinger. I hope that he is wrong, but am waiting for the "wooly bears" to confirm or deny his prediction. In six months we'll know whether he was right.

The difference in preparations for a mild winter and for a hard winter are so slight that it doesn't pay to take any chances. If you are going to do nothing at all, then of course you have no labor or expense. If you do feed to build up stores, you'll need as much in a mild winter as in a hard winter, or maybe more, and the packing time is the same.

While we are on the subject of packing, I must confess that after all these years of packing and not packing, I still don't know whether it is worth while. I have tried all ways. I have packed heavily, and then got sick of so much work, so packed light. Then one year I packed alternate hives and left the odd ones unpacked. I couldn't tell the difference next season. So the following year I didn't pack at all, and didn't suffer any so far as I could see. But once I opened a hive in January, and the top insulation was so nice and warm that I argued with myself that

(Continued on page 702)

Editorials

Be Kind to Bees A number of beekeepers in Jefferson and St. Lawrence Counties, northern New York State, have filed notice with the state's attorney general's office in Albany that they intend to sue the state for damage caused by spraying from airplanes.

Their attorneys assert that oil spray containing DDT, used to control forest insects, had spread so thousands of bees in nearby colonies had been killed or weakened. The beekeepers are expected to sue for $200,000.

One of the first lessons about nature that children learn is the importance of bees in pollination of crops. Even in large industrial areas where agriculture runs a distant second we would hate to have to count the millions of bees buzzing around trying to do a good day's work despite industrial smells and encroachments, DDT, and small boys with bottles.

Even before the New York State case goes to court, we are doing our best to speak good words about bees. Members of the Gleanings staff are continually speaking the gospel of pollination before laymen groups. If we can convince one layman of the importance of pollination, we'll have done our good deed for the day.

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Gleanings Has Visitors It isn't often that Gleanings is visited by so many prominent beekeepers in such rapid succession as occurred during September. It was a great opportunity for us to talk with our guests on the different phases of beekeeping that interested them.

Mr. Paul Holcombe, Chief Apiary Inspector of New Jersey, and his wife spent more than a day in Medina. In that time they toured the manufacturing plant of The A. I. Root Company and the editorial offices of Gleanings. Dr. Harvey B. Lovell, Louisville, Ky., world renown authority on honey plants, visited Medina a few days later. Both he and the Holcombes provided us with interesting information on honey plants. We eventually hope to bring some of their information to Gleanings readers.

We were very interested in the beekeeping methods employed by Mr. R. Guy, our foreign visitor of the month who came from South Africa. Mr. Guy's delightful personality combined with his clever and practical ideas made this visit outstanding.

Our last visitor, Dr. George W. Phillips of Saratoga, California, returned to Medina as a very old friend of Gleanings. Old readers will remember his book, "Modern Queen Rearing" that was published 50 years ago by The A. I. Root Company. At that time Dr. Phillips was in charge of the Root Company apiaries and was responsible for the queen-breeding program.

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Winter Losses of Bees Can be Reduced Most beekeepers who fail are those who do not take time to become familiar with bee behavior. Some beginners may rush into beekeeping on a rather large scale, with insufficient knowledge of how bees behave throughout the year and especially during the winter months. It is essential that beekeepers interested in attaining success should take time to learn the fundamentals of beekeeping, based on a knowledge of bee behavior.

When we ask some beekeepers how their colonies winter or how bees behave in the hive during the coldest part of winter, they will likely say that the bees huddle together in a cluster in order to keep warm. If we ask them how the cluster is formed and how the bees keep warm they are at a loss to explain.

We are told that the honey bee is cold-blooded. That being the case, the bees in the colony must cooperate in

forming a winter cluster, spherical in shape, in which a sufficient amount of heat is generated within the cluster to enable the colony to withstand the rigors of cold spells during the winter.

Those who have made a study of the winter cluster tell us that when the temperature within a hive reaches 57 degrees F., the bees begin to form a cluster. As the temperature becomes colder, the cluster becomes more compact.

The bees on the outside of the winter cluster form what is commonly called a periphery or rim, from two to three inches thick, with heads pointed in and bodies packed close together. The bees in the center of the cluster are not clustered tightly but move about, generating heat by muscular activity. The bees in the rim of the cluster retain a large part of the heat generated by the bees within. The temperature in the center of the cluster never goes below 57 degrees F., even though the temperature outside of the hive may go considerably below freezing, even to 20 or 30 degrees below zero. This is a marvelous phenomenon.

The winter cluster occupying combs with empty cells below and honey above gradually moves on to fresh honey during the winter. When a colony is wintered in a two-story hive and the upper story is practically filled with honey late in the fall, as it should be, the cluster forms, as a rule, with its center approximately between the two sets of frames. As the cluster moves up during the winter it is essential that there be an ample amount of honey in the combs just above the cluster.

During a mild spell in winter, if such occurs, the bees in the cluster will relax enough to exchange positions in the winter cluster and move onto fresh stores. It is during unusually long or protracted spells of cold weather when bees are unable to move onto fresh stores, that heavy winter losses are likely to occur.

Successful wintering rests on the three fundamental requirements, namely, large clusters of young bees, an ample amount of good stores, and adequate protection against the elements.

It is estimated that from 15 per cent to 20 per cent of the colonies wintered out of doors in the North perish during the winter. This percentage could be reduced considerably if beekeepers gave more attention to the essential requirements for wintering bees successfully.

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Use of Honey in Candy Glancing at today's candy counters with their taste-tantalizing array of hundreds of varieties of confections, it is hard to believe that all candy began thousands of years ago as a simple combination of honey, fruits, and nuts.

The earliest references to types of candy or confections are found in Egyptian written scrolls dating back 500 to 2000 years before the birth of Christ. Honey, the original and at that time the only sweetening agent, was combined with figs, dates, and nuts in making various kinds of delicious cakes and confections. A type of candy common in biblical days was a combination of flour and honey and referred to in ancient documents as "wafers made with honey".

Although refined sugar and corn syrup now form the bulk of the sweeteners used by the candy industry, honey is still used to a sizable extent. Consumer preference for certain types of candy in which honey is an ingredient has kept the usage of honey by candy manufacturers at about one million pounds annually.

Favorite honey confections today are plain and nut honey chews, honey taffy, honey nougats, chocolate coated honey-butterscotch, honey nut jells, and golden globes of hard candy containing a liquid honey center. Even more uses for honey in candy are being developed at the Southern Regional Research Laboratory in New Orleans where the candy industry conducts research on new candy ingredients and formulas.

While candies containing honey are delicious to eat as they come from their wrapper, box or bag, they are also good in combination with cake, puddings, and ice cream. Melted honey nut chews, honey taffy, honey nougats are all tasty as a topping. Chop or grind the honey candy and add one-fourth cup of water for every one cup of chopped candy. Melt in a double boiler and serve while warm.

American Honey Institute News Notes

By Harriett M. Grace, Director

IT IS NOVEMBER already. 1953 is almost an old-fashioned date. With terrifying swiftness another year has slipped around the corner of history to make room for its more up-to-date successor.

In a way, it is fitting that Thanksgiving comes in November. With the warm tranquility of summer over, with the chill of late autumn winds, with the sure knowledge that winter snows are approaching, with the turn of the season and of the year, it seems proper to count our blessings of the past and be humbly thankful for them.

The American Honey Institute has much to be thankful for. We have only to look to the membership list in our members' directory to know that we are fortunate to be backed by so many individual businessmen.

The backing we receive from American beekeepers is more than just token backing; many beekeepers have given unstintingly to the Honey Institute. Strangely enough, in these times when the dollar buys less and less, the money sent to the Institute buys more and more. **For dollars spent collectively by the American Honey Institute can buy so much more for the beekeeper than he can buy for himself.** Printing costs decrease as you buy printing in quantity, and the honey leaflets purchased by the beekeeper could never be bought by him on an individual basis for the same cheap cost. Singly, a beekeeper would have to spend huge sums to buy advertising space in one newspaper, whereas a few dollars contributed to the American Honey Institute will help finance the news releases which gain so much space for honey in so many of the nation's newspapers.

Beekeepers know this. And they give freely to our work. For this we are thankful and appreciative. Our large membership list is more than just an accounting of dues received; it is also a list of our friends and well-wishers.

Yes, the American Honey Institute counts its blessings with gratitude and sincere thanks. Now let's play the other side of the record:

Is the beekeeper thankful for the American Honey Institute?

PERHAPS THIS question seems ambiguous. If the beekeeper contributes generously, does it not follow that he is giving because he is thankful?

This is **not** the case in many food industries. Members become members of trade and promotional organizations such as the Institute because they **have** to, because membership is forced upon them.

But not in the honey industry. Membership in the American Honey Institute is completely voluntary. No pressure whatsoever is brought to bear upon the beekeeper to ante in a certain percentage of his crop output, or to meet a quota payment of any kind. Instead, the whole setup of the American Honey Institute is **based on voluntary contribution** toward the worthwhile cause of honey promotion.

Does it not strike you as amazing, then, that as extensive an organization as the American Honey Institute can be—and it is—supported solely on such a voluntary arrangement? The honey industry is small, beekeepers are dispersed and for the most part unorganized. And yet, without prodding or compulsion, enough funds are freely given to the Institute to back it up in its efforts to promote honey.

This has become a source of wonderment to men in other food industries. That our office and work can be sponsored voluntarily by the beekeepers themselves seems almost unbelievable to them.

We accept this fine backing as a show of appreciation from the beekeeper for the excellent honey promotions that the Institute does. We know this to be the beekeeper's way of saying "thanks" for our sincere efforts to make honey a first class seller.

This fine relationship of mutual respect—the Institute for the beekeeper and conversely, the beekeeper for the Institute—is a trademark of the honey industry. On this Thanksgiving we at the Honey Institute send our sincerest thanks to each beekeeper for his financial support.

From North, East, West, and South

NORTHERN CALIFORNIA, Oct. 1

Weather: I did not mention in my last report the record rainfall which occurred in Northern California on the 28th day of August. On that day more rain fell in Sacramento than had fallen in the same month in the entire 100 previous years. The amount was only 0.67 of an inch, with 0.08 inch here at Davis. Several places farther north received approximately one-half inch. Many forest fires were started by the electrical storm. No rain fell during September but recent lightning set 180 forest fires in the tinder dry mountains. A heavy rain over the forested areas would be a blessing, but rain in the valleys would injure some agricultural crops still to be harvested. Many thousands of bushels of grain in bulk are piled high around some of the elevators for lack of storage room.

Condition of Plants: Some pollen and nectar sources are still available in places. Tarweed and blue curls started to yield well in the foothills, but cool nights and a spell of cool weather stopped the flow. Robbing and the driving out of drones are sure indications that the nectar flow has practically drawn to a close for this season.

Condition of Colonies: Most colonies have brood in five to seven combs with bees to cover from nine to 18 combs, depending on whether the colony is in a one-story or a two-story hive. Because of the shortage of the honey flow this year, the tendency to take most of the honey in the second and third stories and to hope that the bees will gather enough for winter will have to be curbed for the best interests of the colonies. Many of our beekeepers winter in one-story hives, reducing the colonies to a single-story hive in time for them to crowd the combs with honey. Many beekeepers also keep back three or four combs of honey per hive as early feed, in case of need. In favorable years, bees will gather nectar early from various fruit trees and weeds but when the temperatures are cool and flight conditions are reduced, colonies will need to be fed. We usually leave colonies in two stories with the second story full of honey, as well as what the bees will store below, and have seldom found this amount too much before the colonies become self-supporting.

At this time of year beekeepers are moving their hives to winter locations, frequently to pollination sites in orchards, and single-storied hives are much easier to move than two-storied ones, unless they are moved by means of a mechanical hoist.

The Honey Crop: The honey crop will be about as short this year in California as it was abundant last year. One beekeeper said that where he made 8,000 cans last year, he will have less than 1,000 60's from some 3,500 colonies. Much of the crop has already been sold because of the demand from local packers and from export market. Some beekeepers carried a part of their large crop over last year, for income purposes. This is usually a good practice and pays well when a bumper year is followed by one of below-average production.

The population of California is increasing by 400,000 a year due to immigration alone. This should soon make California a honey importing state to supply the demand.

The quality of the honey is not as good as last year although some beekeepers report getting fine quality from star thistle and legumes. The quality of the honey entries at the fairs I have attended have not been as good as last year, particularly the exhibits of cotton, orange blossom, and of sage. Some exhibitors, however, have maintained their excellent quality, probably from honey held over from last year.

Fair Exhibits: An attempt will be made this coming year to get more individual beekeepers to take an interest in exhibiting their honey at the county fairs. More beekeepers might

prepare exhibits if a commercial honey jar could be used for exhibit purposes. Good premiums are paid for most entries of honey and of beeswax, as well as for bees in observation hives. The county fairs are generally far enough apart that premium exhibits of honey at one fair could be entered in other county fairs or in the State Fair at Sacramento or the Los Angeles Fair at Pomona. The honey exhibits at the State Fair are placed in the county booths while at the Los Angeles Fair the exhibits of different groups or counties are entered in competition with each other. Some of the county exhibits at the Los Angeles Fair feature bees and honey to advantage.

The industry could well afford to promote exhibits of honey and of honey products to the many thousands of people who attend the fairs. The occasion should be used to acquaint people with the value of honey as a food, of the different ways in which honey can be used, and the different forms in which honey can be produced and sold. People are confused, frequently, by the different colors and flavors of honey. These can be explained by cards. People should be acquainted with the relation of bees to agriculture, with the goodness of honey always in the background. Beekeepers could attract a great deal of attention to their exhibits if they would demonstrate, in a well constructed cage, how bees can be handled and how honey is produced. Most beekeepers are "too busy" to prepare their products for exhibit purposes and leave the field to a faithful few to carry the load of the industry.—J. E. Eckert, University of California, Davis, Calif.

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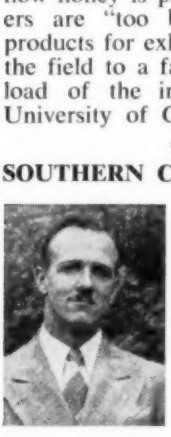
SOUTHERN CALIFORNIA, Sept. 26



Honey Market: One honey buyer, after his attempt to procure supplies of extra white honey, described the honey market as being as strong as "horseradish". The honey market in southern California has been stronger than was anticipated earlier in the season. This encouraging note was indeed appreciated by the beekeepers after experiencing the shortest crop in current history. The cotton has continued to produce some late season honey, and although not as much cotton honey as last season, it has helped out a bit, however these are the only two encouraging features in the present bee and honey picture of southern California.

Colony Condition: The condition of a large percentage of the colonies being moved out of the alfalfa seed pollination back to permanent locations, is deplorable. The colonies are not only short of stores, they have been weakened down by loss of field force due to the heavy use of insecticides. There will unquestionably be a heavy pickup by beekeepers throughout fall, winter and spring. We know of several beekeepers who are commencing to feed their colonies at this time.

Weather: The temperatures in southern California have continued high, no rain as yet. It is hot, dry, dusty and one really feels dehydrated after a long, hot, dry summer. The fall rains are going to really be more than welcome this year. Because of the extreme drought conditions prevailing here this summer, forest fires have been more prevalent than usual. Unfortunately, there have been many thousands of acres of good buckwheat and sage lands that have been burned over and will of course take years to build up.

Miscellaneous: The beekeepers are already planning for another year, some orders for frames and foundation have been received by supply houses, the report is that little inquiry is being made for hive bodies. Because of the favorable honey market conditions that have prevailed, a substantial amount of this year's small production has moved from the beekeepers to the dealers, handlers, and packers, and much of it has already moved to ultimate consumption. This will necessitate southern California importing sizable quantities of honey from out of the state to take care of the increasing demand. New supplies, both of the lighter fancy honeys for bottling and the darker honeys for bakery trade, will be needed.

The help situation in the honey in-

dustry is easing, inquiries are being made for work by beekeepers, the first time this condition has prevailed in southern California for a number of years.

Beekeepers, honey packers, and dealers are all busy down this way, laying the groundwork for the honey promotional campaign scheduled for this fall, and the prospects look very promising for a much bigger campaign even than last year. This is done under the encouragement of Ray Reed, Chairman of the California Honey Marketing Order. The bee and honey exhibits at the Los Angeles County Fair which is now in progress (the largest county fair in the world) were most attractive and very well done. A number of first prizes were received. Free samples of creamy honey were given away by one of the honey packers and a great deal of interest is being shown in the honey exhibits this year.

We understand plans are already in the making to develop an informative and enjoyable California State Beekeepers' Convention scheduled for December 1, 2, and 3 at San Jose, California.

The shorter honey crop of course has its effect on the beeswax market, there having been more activity the past few weeks than previously. —Woodrow Miller, Colton, Calif.

* * *

TEXAS, October 6

Weather: Rainfall for September was generally light and came during the early part of the month while temperature at this period was cool and agreeable. Soil moisture was provided largely by earlier rainfall. With the beginning of fall, moisture became scarce and temperature high with many sections over Texas reporting readings above 100 degrees during recent weeks.

Bees, Plants, and Honey Crop: Bees are generally in good condition with the colonies now having more adequate supplies of winter stores than in several years. Bee forces are strong with plenty of young bees and brood rearing continues active. The fall flow occurred early during the season with good yields reported from tie-vine, frost weed, snow-on-the-mountain, blue thistle, goldenrod, and kinnikinnick from various sections. Aster yielded in few local areas, while broomweed so far was disappointing. The main honey crop during the summer included a mixture of sweet clover and wild flowers, with the highest yields over 100 pounds average reported from Central Texas. In most areas sweet clover was scarce; however, wild flowers yielded better than usually. The flow from cotton was only moderate and came during midsummer with no fall yield reported from this source. There were some losses reported of field bees from insecticides in cotton fields, but colony losses were less than usually. While the honey crop for the year over the State will average below normal, most beekeepers obtained at least a larger crop than in the past two years. The native cedar elms and introduced Chinese elms are important sources of pollen during the late summer with the bloom occurring within two weeks after heavy rainfall. Some of our grasses too are excellent yielders of pollen during the summer. Both forage and grain sorghums are grown in rather large acreage in Texas and bees gather considerable pollen from the flowering heads. The pollen is readily recognized in the hive by the husks of the anthers which adhere to the bees and later are cast out from the hive entrance. Johnson grass, Bermuda grass, and others are of more value as sources of pollen than is generally recognized.

Miscellaneous: During recent years quite a number of Texas beekeepers have specialized in pollination service of legume seed crops. However, with the drouth, reduction in acreage of legumes, and unwillingness of farmers to pay for pollination service, beekeepers have to depend largely on the honey crop for an income. As a result, some beekeepers have migrated to other states where farmers are paying for this service, usually with a share of the seed crop. With 300,000 colonies of bees reported for Texas, this number is not sufficient to adequately pollinate legumes and other crops grown in the State.

The death of Mr. A. W. Bulay of Dayton, Texas on September 26 at the age of 71 marks the passing of another of our prominent beekeepers. Mr. Bulay followed the profession of school teacher, at one time serving as County School Superintendent. More than 30 years ago, he took up beekeeping as a matter of relaxation from the indoor life as a teacher. Having had experience with bees as a boy on the farm, he soon built up a large number of apiaries in Southeast Texas to which he gave his full time for more than 25 years. His territory was well suited for bees, but with honey coming from many sources it was necessary to super the colonies at the right time to obtain surplus from the best grades of honey. Mr. Bulay knew the art of supering and cost of operation as few people do. He operated a honey packing plant and his sales territory included most of his section of the state. He was a member of the Methodist Church, Masonic Lodge, and a past president of the Texas Beekeepers' Association. Beekeepers will long cherish the memory of a man of his qualities.—A. H. Alex, College Station, Texas.

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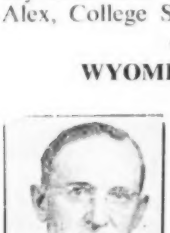
WYOMING, October 9



Weather: Summer and fall have been definitely dry. Our average annual rainfall of 11.2 inches fell short month after month from May 'til the present. And though we escaped the cyclones that plagued many states this year we have had a lot of strong winds that quickly sapped up what little moisture we did get. Frost held off until September 20th. Usually it strikes in the first week, and is always followed by weeks of lovely sunshine. Irrigation certainly saved the day and is being expanded with sprinkler systems on many Wyoming farms and ranches.

Honey Plants: This important item is hard to speculate on, but young plants that should produce nectar next year didn't have much chance this dry season. There is always a good stand of sweet clover along the highways but the maintenance crews are very particular to mow it down soon as it commences to bloom so that it has almost no chance to reseed and sweet clover is an important source. Irrigated alfalfa produces two and sometimes three crops of hay, but here again it is cut when it comes into bloom except the occasional pieces left for seed.

Honey Flow and Crop: On the east side of the Big Horn Mountains the flow was just a trickle until the second crop of alfalfa came on and then the bees filled up rapidly and made some surplus. In the Basin country nature was more kind and the crop approached normal and nearly as well in Fremont County. Over the State as a whole I would estimate the crop as 75 per cent of last year's.

Market: In a local way honey is moving well, but as stated in October Gleanings "Sales Promotion of Honey Must Never Cease". This is truly a highly competitive age and HONEY has never enjoyed as extensive advertising as most other members of the sweet family. And if every beekeeper would do his utmost to promote honey sales much more could be accomplished toward obtaining a popular demand for Nature's most wholesome sweet. A producer in an adjoining county sold his for 11¾ cents f.o.b. his plant.

Miscellaneous: Wisconsin beekeepers are being confronted with having to pay a commercial license on their trucks. It is to be hoped they will win out in their fight against the ever increasing taxing appetite that is so rampant in this "Land of the free and the home of the brave". If it keeps up only the most brave will be able to stand. Surely apiculture is a phase of agriculture and is entitled to farm classification on the highways. Incidentally one of our politicians says we need an additional 150 highway patrolmen. I don't know what the present number is but the State was quite well covered with 15 when they were first put on in 1935.

Sheridan County was treated to a good dose of spray for Canadian thistle. This noxious weed is getting bad, but there were places where they sprayed the willows and the sweet clover for half a mile where no Canadian thistles could be seen.—Earl C. Reed, Ranchester, Wyoming.

MISSOURI, October 1

Weather: Exceedingly welcome rains finally fell over Missouri. It felt so good that I stood out in it and wondered if that was the stuff grand-dad used to refer to. (Well, it has been almost that long since it rained in Missouri!) However, the rain came too late to help this year's honey crop but if more rains follow the late fall bloom will be the salvation of many colonies that won't make the winter without more food supplies.

The severe drought has really hurt many of the beekeepers in Missouri. In the southern part several reported that they had lost most of their stands through starvation. Others doubt if they can winter without feeding.

Market Conditions: The honey market is still in the summer doldrums but is showing an indication to pick up with prices steady or improving. A considerable interest in honey purchasing was shown at the Missouri State Fair.

State Fair: We were very pleased to see the interest displayed in the apiculture division at the Missouri State Fair. Although a larger number of exhibitors would be desired, quality was excellent and competition keen. Personally, your reporter would have hated to have had to make some of the decisions.

It was a pleasure, not to mention an education, to observe Mr. Stiles from Oklahoma A & M judging the honey displays. In my opinion he is one of the most conscientious as well as capable judges with whom I have worked. He is also an interesting conversationalist and lightened the judging session with occasional jokes that were actually humorous instead of the often time-consuming type. The high degree of satisfaction among the beekeepers as to the judging is a good example of Mr. Stiles' ability.

It was interesting to listen to the many comments made about honey and bees. In one case your reporter had rather a difficult time convincing a lady that real light honey is not diluted with white syrup.

One enterprising, as well as lovely, young lady beekeeper cut chunk honey into small squares placed in cellophane to sell at 10 cents per square. Her limited supply was sold out in a surprisingly short time.

Several old beekeepers stopped by and we "bee-talked". It always impresses me as to how little I know about beekeeping as I listen to them "memory-travel" over years of beekeeping. There is much to be learned from their experiences. Much of beekeeping will never be put in books but gleaned only from the hive, directly or indirectly from our beekeepers of "yesteryears".

It is our hope that our apiculture exhibits at the 1954 Missouri State Fair can be largely increased even over this year's outstanding display. The Missouri beekeepers have the ability if the weather will give them a break for a good honey supply.

Miscellaneous: As mentioned in our last report from North Dakota, we were looking forward to meeting the "bee folks" of Missouri. We have met quite a few now and we wish to say that we have never been more cordially welcomed or greeted in a more friendly manner, than here in Missouri. We are looking forward to meeting with the different beekeepers' organizations within the state. We anticipate many interesting and informative discussions.

We would like to use this opportunity to greet all Missouri beekeepers and offer assistance in any way possible. —Julius R. Anderson, State Entomologist, Jefferson City, Mo.

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MASSACHUSETTS, Sept. 21

Weather: It is raining tonight after a long period of very dry weather. Fall-seeded fields and pastures still lie dormant, but the rains should remedy the conditions. Weather has been excellent for removing honey or doing other bee work.

Honey Flow: There have been very short periods this past summer when bees were not able to support

themselves. I cannot remember a better year to work bees. There was a short period of heavy swarming in late May and June, followed by very good flows from clover, lithrum, and go'denrod, with the wild aster yielding nectar freely. Wild aster flows are not dependable except one or two years in ten. This honey is light in color, excellent in flavor and aroma, and when granulated makes an excellent spread for toast or bread.

Miscellaneous: If the beekeepers of the world have a marketing problem, I believe it is of their own making. How many beekeepers eat honey regularly? I would like to wager that not more than half keep honey on the table at all. How many wives of beekeepers cook with honey? The beekeepers on the whole lead a poor example when they do not serve honey to their families and friends, and preach the health-giving qualities of this, the finest and purest of sweets. I have enjoyed many suppers served by the Middlesex Beekeepers' Association of Concord, and now meeting at Waltham, and wish to compliment the officers and members for sponsoring honey by use in cooking and as a food (just plain good honey). If all beekeepers and associations worked together throughout the world there would be no need of Government support or any support.

Perhaps very few readers of this column know that beekeeping is not my main business; that I am Sales Manager and assistant grower of one of the largest New England nurseries, and in the past 30 years have sold more than a million dollars' worth of nursery stock. A few years ago I used to devote one or two days with the bees, but now have only Sundays and a few hours in the evenings. I have had to work fast to manage between two and three hundred colonies. I can rarely spend more than two or three minutes per colony on examination. The days when I could spend an hour or two in a yard of bees is past except in removing honey. Even with this limited time, I still produce record crops of honey for this section. During the honey flows, I often work in the shop until midnight, and am up at 4:30 A.M. to help my son in the dairy before going to work at the nursery. I have honey on hand at the office, and it is not unusual for me to sell honey to one out of three customers who come not to purchase honey but to buy trees and shrubs.

I realize that I have rambled somewhat in this column today. Please forgive me if I have hit a sore spot. Sometimes one needs a few stings to get on the ball. Honey Grove Farms produces fine Guernsey milk, and excellent honey and we eat our own product. We can pet the cows and young stock, and sometimes I would like to pet the bees for doing a fine job, but bees are insects and might misunderstand my intentions. They do not respond to affection.—R. E. Newell, Franklin, Mass.

The Last Round Up

By M. J. Deyell

WHEN NOVEMBER comes, in the North, there isn't much beekeepers can do to improve the condition of sub-normal colonies. Below par colonies indicate a lack of proper management earlier in the season.

It hardly pays to try wintering weak colonies out of doors in the North but they can sometimes be wintered in a bee cellar. If such colonies do manage to reach spring alive they are likely to pass out during the cold days of spring —unless they are strengthened with queenless packages from the South, or bees from very populous colonies in the North. Weak colonies should be united with normal colonies.

To unite, set the hive containing the weak colony (with bottom board removed) on top of another colony, with a sheet of newspaper between the two hives. A small hole in the paper, made with a pencil, will supply some ventilation for the bees above. The bees will gnaw away the paper and gradually unite into one colony. The most desirable queen is likely to be retained and the other one disposed of by the bees.

One good colony in the spring is

worth more than three or four weaklings. A very populous colony may be divided at the beginning of fruit bloom and the queenless division given a young laying queen. With skillful manipulation both divisions may be built up to maximum strength for the main flow.

By applying intelligent apiary management in the fall, winter bee losses and spring labor may be reduced to the minimum.

Beekeepers Wanted

THOUSANDS OF BEEKEEPERS are wanted at once to affiliate themselves with an up and coming organization. This organization is a comparatively new organization, but in the past few years the results obtained by it in its field have added thousands of dollars to the income of its members alone as well as being of benefit to many others. This organization has unlimited possibilities for the future. It is an organization that operates on a National scope thus assuring its members of the very latest information on means and methods of expanding their income. In order to function at its best many more individuals that keep bees are needed as members.

Whether you keep one colony or a thousand you are eligible and your returns from this organization will vary only in proportion to the number of colonies kept. If you want to assure yourself, or that son or daughter, of a profitable future in the keeping of bees join this organization. Its dues are small, only four cents per colony with a minimum of one dollar. The results obtained from joining this organization will net you many dollars for every dollar you pay into it. You have everything to gain.

JOIN THE AMERICAN BEEKEEPING FEDERATION. Send your dues today to the American Beekeeping Federation, Osseo, Wisconsin. If you wish any additional information write me. — E. H. Adee, Sutherland, Nebraska, Chairman, Membership Committee, American Beekeeping Federation.

Happy Thanksgiving from the Gleanings staff.

Edward Lloyd Sechrist Passes On

WORD CONCERNING the passing of Mr. E. L. Sechrist, September 9, at his home in Escondido, California, came as the October Gleanings was going to press, hence the brief notice.

Mr. Sechrist had a colorful experience with bees in different parts of the world—Africa, the Island of Tahiti, Haiti, Maryland, Ohio, and California. Few beekeepers have had such a variety of experiences. His many articles that appeared in bee journals are familiar to beekeepers everywhere, as are also his books on beekeeping.

While working in the office of Bee Culture, U.S.D.A., he was one of the first to undertake a study of costs in producing honey.

Mr. Sechrist will always be remembered for his genial personality and his enthusiasm in advancing the interests of beekeeping.

Edward Lloyd Sechrist

A Living Memorial

A LITTLE more than a year ago, a committee was appointed by the Iowa State Horticulture Society to investigate the possibilities of a suitable memorial for the late Frank C. Pellett.

The committee was composed of three members from the Society and three from the Iowa Beekeepers' Association. It met in late summer of 1952 and after consultation with the Pellett family recommended that the five-acre wild life and wild flower refuge set aside by Mr. Pellett some 40 years ago on his farm at Atlantic, Iowa, be used as such a memorial.

Title to the tract will remain with the Pellett family. The memorial will take the form of making the tract available to those who are interested, the erection of a suitable entrance with plaques or inscriptions, the fencing of the area, the identification and marking of the many species of plants, shrubs, and trees growing there, the laying out of suitable paths and trails and possibly the addition of other plant material as it becomes available, all aimed at the perpetuation of the plot in much the same manner he would have maintained it had he lived.

It is intended as a memorial to the accomplishments as well as an honor to the memory of an individual and every effort will be made to develop it in harmony with the life and the philosophy of the one it memorializes.

For that reason it will be plain and practical. Permanence without extravagance will be the watch-word. Necessary funds are being solicited from all those who had an interest in his work and the number of contributors will carry importance above that of the total amount of contributions.

The suggestion has been made that the memorial be completed and the dedication be held on his birthdate of July 12, 1954, possibly as a part of a summer meeting of the Iowa State Horticulture Society or the Iowa Beekeepers' Association, or both.

Contributions toward this memorial should be mailed without undue delay to Glenn O. Jones, Chairman, Pellett Memorial Committee, Atlantic, Iowa. A complete list of individual donors will be made public and will become a part of the memorial.

Bee Facts

(A Digest of Scientific Research)

Does Royal Jelly Increase Life Span of a Queen?

"Yes", reported Dr. Thomas S. Gardner to the American Chemical Society a few years ago. This noted chemist, of the Hoffman-La Roche, Inc., in Nutley, New Jersey, had completed a study of Royal Jelly that was supplied to him by beekeepers.

Royal jelly is a brood food. It is a milky white, finely granular jelly with a strong acid reaction. The larvae of the queen receive no other food but it is fed to the larvae of the workers and drones for about two to three days.

Dr. Gardner separated royal jelly into its chemical components, and then investigated each fraction for longevity factors using the small fruit fly as the test organism. Tests showed that raw, dehydrated royal jelly had beneficial effects on the life span of these fruit flies.

Pantothenic acid was identified as the primary ant-aging factor in royal jelly. The beneficial effects of this acid in regards to life span was found to be outstanding. Pantothenic acid is one of the B vitamins.

Reference: Gardner, Thomas S. The Use of Drosophila Melanogaster as a Screening Agent for Lonevity Factors. Part I. J. Gerontology, Vol. 3, No. 1, Jan. 1948.

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How Acid Is Honey?

This question was answered a few years ago by H. A. Schuette and F. J. Schubert, chemists at the University of Wisconsin who investigated the acidity of honey.

The Wisconsin scientists found that the range of the acidity (pH) of honey, based on samples from 48 different sources, was between 3.1 and 4.5 with an average of 3.5. See how this compares with the average acidity (pH) of the following foods: Orange juice, 3.7; tomato juice (red), 4.2; apple juice, 3.3; dill pickles, 3.1; and sweet pickles at 2.7. (The lower the figure the greater the acidity.)

This research with honey led the specialists to believe that geographical origins do not apparently exert much influence on the range of acidity.

Comb honey had a lower pH(3.52) than extracted honeys packaged in glass or in tin containers. The extracted honeys which had been received in glass containers had practically the same pH(acid) as those packages in tinned containers, the average pH values for the extracted honeys being 3.62 and 3.61, respectively.

The percent of ash was found to vary over a wide range; in general an increase in ash accompanied an increase in pH(acid) and an increase in color. It is now common knowledge that the minerals in honey are found in the ash.

Reference: Schuette, H. A. & F. J. Schubert. The Acidity of Honey. Trans. Wisc. Acad. Sci. Vol. 36: pp. 427-433. 1944.

●

Are Green Flowers Attractive to Honey Bees?

Green flowers are not well adapted to attract insects, according to the late John H. Lovell, noted authority on honey plants. He pointed out that green flowers are probably degenerate forms of insect pollinated flowers.

Green flowers are usually small, or even minute, are often incomplete, can be self-pollinated, and produce seeds that can be carried by the wind. However, some green plants attract insects but only a few pollinators go to them.

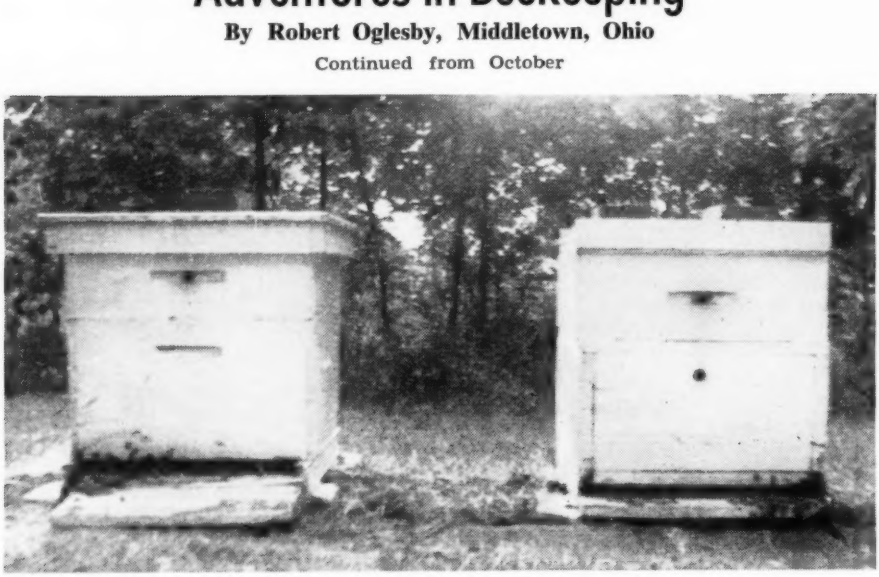
"Any surface, whether it is bright or dull-colored, on which there is nectar or honey, will be freely visited by bees for stores after these liquids have once been discovered; but they will not be discovered as quickly on a surface which does not contrast in hue with its surroundings as on one which does so contrast."

Reference: Lovell, John H. Pollination of Green Flowers. The American Naturalist, Vol. XLVI., Feb., 1912.

Adventures in Beekeeping

By Robert Oglesby, Middletown, Ohio

Continued from October



Two colonies that survived the winter of '47.

The Third Year

AFTER BUILDING up from 21 colonies to 50 in the first year, and then suffering a 38 per cent loss down to 31 the following year, only someone touched with "bee fever" or worse would attempt to build up again so soon. However, that is what I did in '48. After all, had not some lessons been learned and a net gain achieved of 11 colonies since the beginning?

As my spirits recovered from the '47 setback I worked at the bench in the garage during the winter, re-wiring, repairing, and putting foundation in the units which had been destroyed by the wax moths the summer before. Comb honey supers had to be readied too. There was no heated basement to work in this time. Our new home was on one floor with the garage attached to the east end. There was a cement block wall between it and the furnace room. We were still pretty busy with the house but I made ready 14 units of deep hive body and shallow super food chambers for use the coming season.

Getting Ready for the Flow

Spring soon came rushing on, and the 31 left last fall survived the winter! They went right on into the honey flow too without any feeding. Fourteen produced comb honey, five others (16 per cent of the total) swarmed in May but still drew and filled three new shallow super food chambers, while the other 12 hives were used to make the remaining new shallow super food chambers. These last 12 also provided queen cells and frames of brood for nine of the new full-depth hive bodies.

After the poor results with the expansion method used the first year I became more conservative this time. In each of the new full-depth hive bodies were placed four drawn combs of brood, bees, and a queen or queen cell from the 12 old hives. Six frames of foundation filled out the balance of each new hive body, and on top was placed a new shallow super already filled with bees and combs drawn over the 12 old hives. This meant that the 12 old hives furnished an average of three combs each from their brood chambers. Frames of foundation replaced them.

Five more new full-depth hive bodies were made with the five swarms. So much of the bee literature spoke of the power of swarms that I let them

have a try at it. Each of them was put in a full-depth hive body with foundation. Most of the swarms, as I found out later, drew only about one-half to three-fourths of the foundation. Later in the summer they were each given one of the shallow super food chambers which had previously been drawn and filled over an old hive.

At the end of the summer these maneuvers resulted in 14 new colonies, for a total of 45. In late August two were found to be queenless. They were united with old hives by the newspaper method. As some readers may know, this consists of removing the top of the hive which is to receive the other, placing a newspaper over the open super, punching a few holes in it for air and then placing on top of the paper the hive body containing the weak colony. They soon chew away most of the paper and unite gradually. So at the end of the year there were 43 hives.

The 14 which had not been used in making increase, and which did not swarm, produced 279 pounds of comb honey, sold at 40 cents per pound. This was about 20 pounds per colony, and while there was room for lots of improvement it was the best total of pounds yet.

Among the odds and ends of equipment were three shallow supers with the small section boxes in them, foundation and all, ready to go. Each of them had been placed over a colony, and each colony in turn had swarmed rather than work in the little boxes. Those supers sat on the hives all summer and nothing was done, while all around them the bees were making comb honey in the full-length frames.

A Little Known Honey Tree

By Paul Hadley, Philadelphia, Pa.

PECULIAR TO the southeastern section of the United States is the Silverbell tree, which is found growing wild in two varieties. The Great Silverbell (**Halesia Tetraptera**), and the Two-wing Silverbell (**Halesia diptera**), are similar trees, but the Great Silverbell has larger flowers and more bloom than the Two-wing species. The name "two-wing" is given it from the peculiar flattened wings on the seeds; the Great Silverbell having four "wings" on each seed.

Both trees grow to a height of 50 feet or more, and in the early spring are covered with literally billions of small, white bell-like flowers. It is hard to imagine a sight more beautiful than one of these trees in full bloom; and after the flowers have gone, the tree makes a dense shade. The blooming season is longer than that of fruit trees, lasting from 10 days to possibly three weeks or so.

Bees work these trees almost to the exclusion of all others when they are in bloom. The writer has heard the humming of bees in these trees 50 to 100 feet distant.

Although the trees are native to the semi-tropical climates of Carolina and southward, they seem to be perfectly hardy in the North, where they bloom at about the same time as the fruit trees.

The Great Silverbell

Asked & Answered

Granulation of Winter Stores

Question: I expect to winter most of my colonies in two-story hives with the upper story full or partly full of honey. Will the honey in the upper story granulate if left on all winter or will there be sufficient heat to keep it from granulating?—Ohio.

Answer: This will depend on the character of the honey to a large extent. The honey stored in some localities is more inclined to granulate than others. However, if the honey is properly cured by the bees it is not likely to granulate—especially in the East. Even though it does become partially granulated this does not make it unsuitable for bees in winter.

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Boiled Honey for Winter Stores

Question: Is it safe to feed bees honey for winter—honey that has been boiled?—Illinois.

Answer: No. Honey that has been boiled is not fit for winter stores in your locality. This honey should be saved to feed to the bees in the spring for spring brood rearing. Nothing but sugar syrup made from granulated sugar or sealed combs of good quality honey should be given to the bees for winter stores.

* * *

Queen Bees' Sting Not Barbed

Question: I would like information concerning the queen honey bee stinging apparatus. Are there barbs on the dart and if so is this the reason she can withdraw the stinger without injury to herself?—Pennsylvania.

Answer: A worker bee's sting has barbs which make it impossible for the bee to withdraw its sting after it has entered the flesh of a human being or animal. The sting continues to work in deeper and deeper, due to involuntary muscles which operate the sting after it has become detached from the body of the bee. The sting of a queen bee has no barbs but is straight and can be withdrawn from the flesh by the queen. This is also true of wasps and bumble bees. They can sting more than once, whereas a honey bee can sting only once and then loses its life after losing its sting. It seems obvious that the queen not having a barbed sting permits her to sting a rival queen to death without loosing her sting and her life. If both queens were to die the colony would become hopelessly queenless—if there should be no eggs or young larvae in the combs from which the bees could produce another queen. The queen having a barbless sting helps to insure perpetuity of honey bees.

* * *

Peering Underneath to Find Queen Cells

Question: Your August 1953 issue contains a statement that I, a beginner, would like to have amplified, please. The Propolis Pete page inferred that the queen cells may be located by peering under the b.ood chamber without once removing the separate brood frames. If this is the case I, for one, and likely many others would like to be in on the secret. Please give us the answer. Many thanks from an interested 10-colony beekeeper.—Alabama.

Answer: It is apparent that Propolis Pete uses a method of finding queen cells that is used by some commercial honey producers, especially during the busy season when it seems impossible to examine every comb in the brood chamber. As a rule, most of the swarming cells are found near the bottoms of the combs and it is a comparatively simple matter to tip one end of the brood chamber up far enough to look underneath to find and destroy the queen cells. In your case, however, having ten colonies of bees, it would be much more satisfactory for you to examine the combs in each brood chamber for queen cells. There is this to be said in favor of locating queen cells by peering under the brood chamber, namely, that it is a quick method of finding out whether or not queen cells are being built in preparation for swarming. However, in our opinion, this method is not infallible because one or more queen cells might be missed, whereas, if all of the brood combs are removed and examined carefully, no queen cells should be missed, especially if bees are shaken from each comb. Occasionally there may be a small queen cell down in the corner of a comb that is easily overlooked. It is usually necessary to shake some of the bees off the brood combs in order to see queen cells.

An Indoor Observation Hive

Question: Can you tell me the proper management of an indoor observation hive in winter?—New Jersey.

Answer: If this hive is a single-comb observation hive it would hardly be possible, in your latitude, to have the bees go through the winter successfully. It might be possible, in the far south where bees collect pollen during the entire winter, to maintain such a single-frame hive of bees. In the North, it seems necessary to have a fairly populous hive of bees to go into winter quarters. Normally, such a colony winters better out of doors than inside surrounded by room temperature. The difficulty in attempting to winter either a small or large colony of bees indoors is that the bees are active and the queen continues brood rearing as long as there is any pollen in the combs of the hives. The bees being unable to collect pollen during the cold months find it impossible to continue brood rearing and consequently the colony dwindles in strength and eventually dies before spring. Out of doors, a normal size colony in your latitude is likely to winter successfully, provided it has an adequate amount of stores. Brood rearing is practically suspended during the months of November and December. The queen takes a vacation and the bees form a cluster when the weather becomes cold and consume just enough honey to keep alive. It would seem advisable, therefore, to unite your one frame observation hive of bees with a normal colony outside, late this fall, in early November, then take a comb containing some brood, the queen and adhering bees from this hive this coming spring, to put into the observation hive.

* * *

Number of Bees Needed for Winter

Question: How many pounds of bees are needed in a colony for winter?—Ontario.

Answer: In late years it has been the practice of the best beekeepers to winter colonies in one and one-half or two stories. Strong colonies that occupy all the frames in warm weather will winter better than a colony that occupies a single story in warm weather. The larger colony, when measured by weight, would be four or five pounds of bees; the single story about three pounds. It is evident that the two-story colony will consume more stores than the smaller colony and produce a bigger crop of honey. Consumption of stores is due to brood rearing which keeps colonies strong and ready for a honey flow. Another reason for the two story: Bees should be located between the upper and lower stories. Through that cluster is the bee space so bees can move readily to all parts of the hive. In a single-story hive bees will have to be near the top or next to the honey board. In most cases the cluster will be two inches below the honey board during the fore part of winter. Should weather turn cold they may not be able to pass crosswise of combs as readily as if the cluster were between the upper and lower story.

Handy for Housewives

Packing processed honey in small blocks like butter makes it neater and easier for housewives to serve honey. Gone is the bothersome drip—the result is a pleased customer and eventually another sale. The package shown is packed by J. F. Anderson of Oshawa, Ontario. Every pound package of this SWEET BLOSSOM honey is as "smooth as it is sweet".

Second Glances

C.M. Isaacson

The basic essentials of winter packing are given concisely in A. W. Kruse's article (page 585). A healthy colony with a vigorous queen and plenty of stores is surely the first consideration—more and more you will find it is true that **what** you pack is even more important than **how** you pack. An upper entrance is needed in colder climates especially, for moisture escape; and an effective windbreak will prove its value repeatedly. Our packing has two points of difference from Mr. Kruse's, however; we have found a certain amount of packing on three sides as well as on top desirable; and we not only do not care if the inner cover does not fit tightly, but actually remove the block over the usual center opening to let moisture escape into the packing.

That paper cutting device (page 588) should certainly speed up the preparation of proper sized lengths of paper for packing. It is one of those simple devices that once used, one wonders why he has done without it.

Disposal of cappings is sometimes quite a problem in large scale extracting operations. Many methods can be used—those involving the use of heat; pressing or draining the honey out; letting the bees rob the cappings dry; or simply melting for the wax and discarding the honey. Of methods using heat, the Brand melter is perhaps the best if run carefully and at full capacity (this last is important—the more cappings run through up to capacity, the less the honey will be darkened). Of the non-heat methods, a sufficiently large capacity draining system is probably as good as any.

Sales promotion and honey publicity are not one-time-a-year affairs, but must be kept up continually, As H. H. Root says (page 592) we are fortunate as beekeepers to have an organization that does so much for us on so little as the American Honey Institute does year after year. The Federation, the P.M.A., etc., all help also, but the final answer must rest with the beekeepers themselves. In this connection, the enthusiastic beginner or back-lot beekeeper create much more demand by their spontaneous efforts than any other beekeepers. They produce honey, they talk honey, they very nearly "live" honey.

Honey is an energy food. We know that, of course, and the item on page 593 tells us it helped to climb the world's highest mountain. While this is not too important in itself, it can be used as good publicity. "Honey helps to conquer Mt. Everest", or something similar.

Honey packing plants should preferably be of fireproof construction to save on insurance costs says Dr. Dyce (page 594). And he repeats the caution as to having your honey melting room so arranged that the honey flows away from the heat as it melts—to avoid discoloration and consequent lowering of grade. Honey pumps too should be watched so that they do not incorporate air into the honey. Dr. Dyce's articles should be both of interest and definite value for those engaged in packing honey.

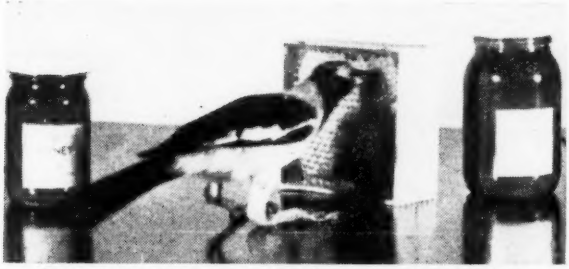
Fiction is rather an innovation in Gleanings but "The Bees of Kiliatos" seems well worth reprinting (page 597). It will be no surprise if after the second installment, there is a demand by Gleanings' readers for similar inclusions in the future.

Beekeeping always seems to have both ups and downs—and Mr. Oglesby's second year had an ample share of the "downs". Bee moths do not damage combs very quickly this far north, but I can well imagine the sinking feeling occasioned by the sight of all those destroyed combs (pages 600-601). As regards feeding, if one has no extra combs of honey saved, dry sugar is a quick and good way to feed.

"Excessive moisture in a hive is a symptom, not a cause of trouble". This quotation from the late Dr. E. F. Phillips is one to keep in mind. Here is another reason for extra strong colonies, even for winter; as a large cluster can keep the temperature up more easily to the point where the moisture will not be harmful. It is **what** you pack that counts (page 610).

At Selling Honey, He's a Bird!

By C. B. Waldron, Malvern, Pa.



Tony loves his honey.—Photo by Paul Cummins.

FOR OVER 16 years Tony, a brilliant yellow, black, and white Troupial from Colombia, South America, has been convincing visitors to our small roadside beeyard that honey is a best buy for a long healthy life. When this nosey bird swoops into the salesroom to look the customers over, we enjoy telling them that honey, both comb and extracted, is his favorite daily food. They are impressed to learn that the troupial which came up with him 16 years ago, but which lived with a non-honey-using family, died several years ago, while Tony is still spry, noisy, and the terror of our four bird-conditioned cats.

The Philadelphia Museum of Natural History gives the life-span of troupials in captivity as from 12 to 15 years, so Tony, with his private comb of honey, besides honey on his daily cereal and milk, is a strong pro-honey argument. Customers bring their children to see him, for he loves children, especially babies, and sings his entire repertory for them, from soft chuckling sounds to the ear-piercing whoops that sound like a battery of cardinals before a powerful amplifier.

Like most star-salesmen, he has temperament. When he feels that we are neglecting him for the bees, he revenges himself by removing the price tags from the honey jars to his basket, or by ripping up reading matter. Years ago we learned that he cannot be trusted with comb honey, for while we were cleaning a batch of fancy sections, Tony was hopping along the row of completed ones, sampling each in turn—over five dollars' worth. Since then, all our combs are kept either under glass or tightly covered.

Another favorite treat is a piece of burr comb full of drone brood, which he deftly extracts and gobbles with the greatest relish. When queen bees arrive, they must be securely protected from his passionate desire to pry the screen apart and sample the precious occupants. He will park for hours before an all-but-closed drawer, making frenzied efforts to get at the cages within. His inch-long black beak easily pries open cupboards and even regular doors not too tightly closed to offer the tiniest leverage, and when he is given an empty queen cage to work on, the screen quickly develops holes like a Swiss cheese. He does not eat adult bees, but objects to their appearance indoors, and pounces upon them with murderous intent if nobody is near to rescue them.

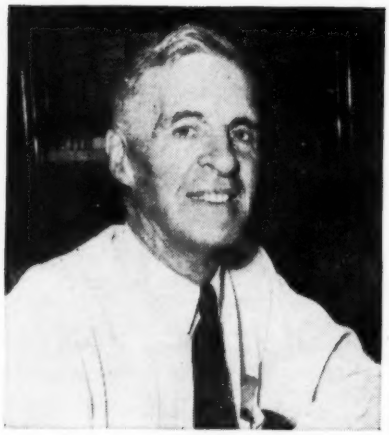
But if his behavior toward bees leaves much to be desired, he makes up for it by his ability to sell their honey. If Tony had received a commission on all that he has sold so far, he would own the best-feathered nest known to man or bird.

Our Cover Picture

Meet "Boo Boo" Buchanan, son of John Buchanan, Bee Supply Sales Manager of The A. I. Root Co. "Boo Boo" is a great friend of the Gleanings Staff for he frequently visits us with his father, who incidentally, took this picture.

A Talk to Beginners

M. J. Deyell



(Continued from October)

On to Vancouver, British Columbia

ACCORDING TO Rand McNally, the province of British Columbia contains 359,279 square miles which include Vancouver Island and Queen Charlotte Islands. It is over eight times the size of Ohio. The scenery is picturesque and rugged, being diversified with mountains, lakes, and rivers. I had time only to visit the southern portion of this large Province.

Have you ever viewed scenery so beautiful and awe inspiring that you had a strange feeling way down inside of you and wanted to say something, but couldn't find words to express your thoughts? Well, that is how I felt when I looked from the ledge of a lofty mountain into the deep valley below or gazed from the bottom of a deep ravine up into snow-capped mountains above. One feels very insignificant when attempting to comprehend the meaning of such wonders of creation as are displayed in Nature. The psalmist David expresses his emotions in poetic language: "The Heavens declare the glory of God; and the firmament showeth His handiwork."

On reaching New Westminster, about twelve miles east of Vancouver, I called up Mr. V. E. Thorgeirson, the Bee Inspector for Western British Columbia, who kindly offered to drive me around to see some of the beekeepers in that area. I was glad to have someone do the driving, for a change, especially where traffic is unusually heavy.

We visited the Hodgson Bee Supply Factory in New Westminster which was turning out bee equipment, also putting up crystallized honey in two and four pound cans, a fine product.

We also visited McGavin's bakery in Vancouver. James McGavin kept bees in Scotland years ago, in fact, he made enough money out of bees in that country to start in the baking business in Canada. He now operates a large up-to-date bakery with branches in different parts of the Dominion. Mr. McGavin has an interest in bees operated in the Peace River district, of northern British Columbia.

When we visited F. Piercey a commercial beekeeper in Glenmore, we found him busy preparing supers for a honey flow that was on in that area.

After spending a delightful day with Mr. Thorgeirson, I left the following morning for Seattle, Washington. The northwestern corner of Washington is quite similar to the extreme southwestern part of British Columbia.

On reaching Seattle, I called up George Hundsdorfer, the author of the article that appeared in "Gleanings" recently on applying laughing gas to bees. Mr. Hundsdorfer who keeps bees on the side is an electrician and operates his own shop. However, his bees claim a considerable amount of his time and he is well versed in various phases of the industry.

I also had the pleasure of meeting Mr. C. F. Turnipseed, Apiary Inspector of Washington, also Royl M. Johnson, County Bee Inspector. In company with Mr. Johnson and Mr. Turnipseed, we paid a visit to Howard Graff of Bow, Washington. Mr. Graff operates a large number of colonies as well as an up-to-date honey processing and bottling plant. We enjoyed a delicious chicken dinner at the Graff home.

While there the weather was ideal for nectar secretion and beekeepers in that area were enjoying a fairly good honey flow. I have not learned, since

A beautiful apiary piled high with supers, near a highway in western B. C.

visiting northern Washington, just how the honey flow turned out.

On to Oregon

I MADE such a hurried trip through Washington that I did not have time to learn much about the State. I understand there is a rainy season during a part of the year along the coast of Washington and Oregon and that the people do not call it rain but rather, a heavy mist. While I was there the weather was ideal.

I wanted to call on Mr. W. J. Dailey of Vancouver, Washington, President of the Washington State Beekeepers' Association. I arrived there on Sunday and found Mr. Dailey getting ready to attend a bee meeting of the Portland, Oregon Beekeepers' Association just across the Columbia River in the afternoon. He wished to know if I cared to accompany him to the meeting. Naturally, it was a pleasant surprise to learn of this meeting so after a short visit with Mr. Dailey, I followed along behind him to the Portland meeting.

If you have ever tried to follow a car through a strange city you will understand the difficulty I had trying to keep up with Mr. Dailey as he turned right, then left, up hill and down, until we arrived at the meeting place in a park on the outer edge of the city. I knew that if I lost sight of his car, I would be lost.

On arriving, we found about 100 beekeepers assembled around long tables laden with delicious food. What a picnic dinner that was! There did not appear to be any shortage of food in that section of the country.

It was a pleasure to meet Chester Meeker, President of the Portland Association, also Harold Moulton, an agressive commercial beekeeper with 800 colonies, as well as others who read Gleanings and recognized me from my picture that appears with my "Talk to Beginners". A few years ago a beekeeper in Tennessee told me that I wasn't as good looking as my picture and I knew he was telling the truth. The Oregon beekeepers may have thought so but they were kind enough not to tell me the bald truth.

The Portland Association sponsors a bee school for amateurs. This seems to be a worthy project and we wish more beekeeping associations over the country would follow the example of the Portland Association. I have said and still say that we need more beginner beekeepers to take the places of older beekeepers who are gradually passing off the stage of beekeeping. Beginners are usually enthusiastic and they help to advertise honey and bees. Our industry does need a shot in the arm at the present time.

This meeting was held right beside one of the Moulton apiaries, Mr.

Moulton explained the essential steps in rearing queens, also in honey production. The honey was coming in so rapidly that day that the bees paid no attention to people walking around the hives. Some of the colonies were piled quite high with supers.

I had intended continuing my journey through Oregon soon after dinner. It was difficult to break away from the congenial group of beekeepers so I did not get started away until after six o'clock. Consequently I had to make up for lost time as I was scheduled to be in Millbrae, California, the home of one of my daughters, on Tuesday evening, July 14.

The Southwestern part of Oregon is a rough and rugged country. There are many large loads of pine logs moving over the mountain roads. The drivers of these trucks become quite skilled in rounding the sharp curves. If you happen to get behind a truck load of logs going up a long grade you might as well take it easy, unless perchance the driver of the truck is kind enough to turn out onto a siding to permit the accumulation of cars behind him pass by.

I thought I had seen high mountains in the other states and provinces through which I had traveled but I began to realize that Oregon has her share of forests, rivers, lakes, and mountains, and especially pine trees. At one point along the road I stopped beside a small lake to take a picture of huge pine logs floating in the water, waiting to be taken, one by one by means of huge tongs, up a slide into a saw mill nearby. I was particularly interested in this procedure, having spent a winter in a lumber camp south of Sudbury, Ontario, when I was 19 years of age.

I failed to see any hives of bees along the mountainous roads in southwestern Oregon, leading to the Pacific Ocean. In some instances beekeepers prefer to have their hives in a ravine sheltered from the wind, also from the view of people passing along the highways.

California at Last

I REACHED Crescent City, California, just over the Oregon and California line along about 6:00 P. M. The highway from there south runs along the Pacific Ocean for some distance.

John Corner, Vernon, B. C., provincial Apiarist, in his home apiary.

To those of you who are looking for thrilling experience I can recommend nothing better than a drive from Crescent City to Eurica along late in the afternoon while the sun in the west, over the ocean, is nearing the horizon. This is a glorious sight, simply out of this world.

Parts of this highway pass through the Redwood Forests. These monstrous trees towering up into the blue and the evening shadows falling over the highway as darkness approaches, help to create sort of a "spooky" atmosphere difficult to describe. I could see goblins peeking around the sides of the redwood trees.

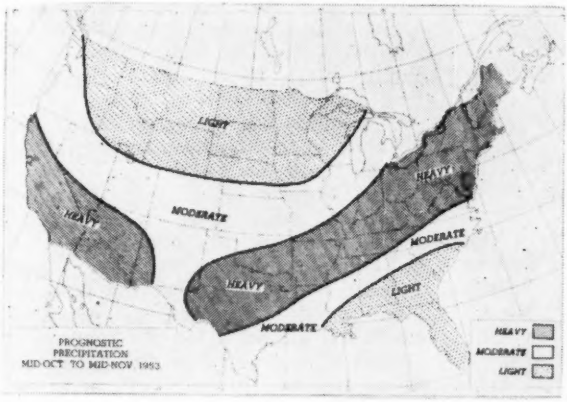
In due time I approached the Golden Gate bridge, one of the most marvelous creations of man. One has to actually see it, close up, to appreciate its wonders. To drive over this bridge is the thrill of a life time.

Those of you who think you have seen heavy traffic should drive through San Francisco around 5:00 in the afternoon. My destination was fourteen miles south of the city. Just how I managed to make it through a four lane highway, with cars bumper to bumper I'll never know, but I was thankful to arrive—all in one piece.

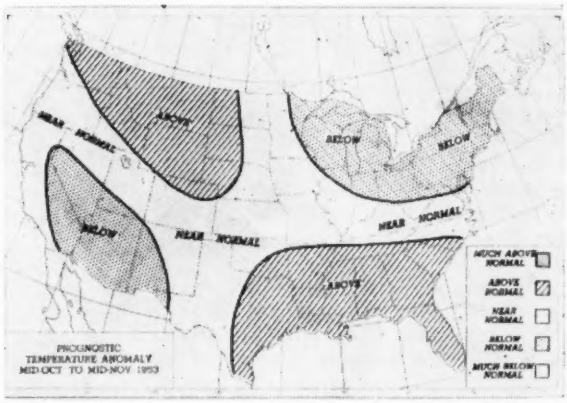
(to be continued)

Average Monthly Weather Resume and Outlook

U. S. Department of Commerce, Sinclair Weeks, Secretary
Weather Bureau, F. W. Reichelderfer, Chief



Prognostic precipitation Mid-October to Mid-November, 1953



Prognostic temperature anomaly Mid-Otober to Mid-November 1953

The above charts for the United States show for the next 30 days, the expected departures from normal temperatures and the expected total precipitation by means of classes.

Outlook for Mid-October to Mid-November 1953

The Weather Bureau's 30-day outlook for the period from mid-October to mid-November calls for temperatures to average below seasonal normals from the Great Lakes Region eastward to the Atlantic coast and also in the far Southwest. Above normal temperatures are expected in the Gulf and South Atlantic States as well as over most of the Northwest quarter of the nation. Elsewhere near normal temperatures are indicated.

Drought-relieving rains are expected to result in greater than normal precipitation in a broad belt extending from Texas northward through the Ohio Valley to New England, although these rains may not begin in quantity until about the end of October. Somewhat more rain than normal is also expected over the Southwest. Less than normal amounts are indicated for the Northern Plains, Northern Rocky Mountains, and Southeast.

CAUTIONARY NOTE: The 30-day Outlook given here is not a specific forecast in the usual meteorological sense, but is an estimate of the average rainfall and temperature for the next 30 days based upon the best indications now available. For more specific predictions subscribers should look to the local forecasts published by the nearest Weather Bureau office. Daily local forecasts are limited to approximately 36 to 48 hours in advance; more general 5-day forecasts are made twice a week. The Outlook will be most useful when interpreted and applied by an expert.

The National Honey Show

SEVENTY-TWO EXHIBITORS, representing many of the principal honey-producing areas, displayed several hundred entries at the FIRST NATIONAL HONEY SHOW at St. Paul, Minnesota, August 29th through September 7th. Distance seemed of little importance since many fine exhibits came from California, North Carolina, Texas, Florida, Montana, and many states in the midwest.

It is felt that at least part of the success of this first show was due to the efforts of state leaders who helped promote the show in their own state.

Thirty-six exhibitors entered the light-colored honey class that included all white honeys grading 0 to 17 MM on the Pfund grader. Competition was also very keen in the amber and dark classes. These classes attracted many of the Fair visitors who gazed in wonderment at labels reading "Palmetto", "Star Thistle", "Sage", "Orange" and "Tupelo".

The comb honey class with one dozen entries seemed to be small compared to the other classes. However, this may have been due to the difficulty in shipping the perishable exhibits.

The chunk honey class, the most spectacular of all classes, provided not only competition from a quality standpoint, but also brought out a lot of showmanship. Tops in this class swept the show for the coveted American Beekeeping Federation Trophy for the most outstanding sample of honey in the show. This exhibit proved to be really perfect, scoring 100 points out of a possible 100.

The Granulated Class suffered a little because of the intense heat of the opening days of the fair. However, these conditions did accentuate some of the important characteristics for this class since the better samples stood up well under the heat.

The Beeswax class proved rather difficult to place, although the quality of the wax was very good. Some of the exhibitors chose to enter fancy moulded wax rather than the conventional blocks. However, the moulded entries did attract a lot of attention.

Class H, sponsored by the American Honey Institute, proved to be extremely interesting. Much interest developed over this exhibit that showed how consumers should use honey.

Each exhibitor competing for the beautiful Honey Institute Silver Bowl had to show a honey cake, honey cookies, and candy made with honey.

Thirty-five entries were shown in this class. Most of these entries were from Minnesota because of the difficulty of shipping perishable exhibits.

The judging of the show was capably performed by Professor E. C. Martin, Michigan Extension Apiarist, who also acted as Chairman. Dr. M. H. Haydak of the University of Minnesota and Mr. Don Robertson, Manitoba Provincial Apiarist, assisted Professor Martin with the judging. These men worked hard to complete the job in two days.

Trophy Winners

Trophy	Type of Trophy	Winner
American Beekeeping Federation—for the most outstanding sample of Honey	Engraved Silver Tray	Eugene Killion Paris, Illinois
A. C. Woodman Co., Grand Rapids, Mich. —for Light Colored Honey.	Engraved Silver Aspic Tray	Carl Soder Stratford, Iowa
R. B. Willson, Inc., 250 Park Ave., New York, N. Y.—for Amber Colored Honey.	Engraved Silver Punch Bowl	W. C. Miles San Bernardino, Cal.
The Diamond Match Co. Los Angeles, Calif. —for Dark Colored Honey.	Engraved Silver Water Pitcher	Honey Acres Menomonee Falls, Wisconsin
The A. I. Root Co., Medina, Ohio —for Comb Honey.	Engraved Silver Cov. Serv. Dish	Eugene Killion Paris, Illinois
G. B. Lewis Co., Watertown, Wisconsin —for Chunk Honey	Engraved Silver Cake Plate	Eugene Killion Paris, Illinois
Sioux Honey Association Sioux City, Iowa —for Granulated Honey.	Engraved Silver Relish Tray	Honey Acres Menomonee Falls, Wisconsin
The Dadant Co., Hamilton, Illinois —for Beeswax.	Engraved Silver Cov. Veg. Dish	Frank Finn N. Mankato, Minn.
The American Honey Institute —for the best combination entry of cake, cookies and candy.	Engraved Silver Fruit Bowl	Mrs. Virginia Beard 5516 France Ave., Minneapolis, Minn.

Just News

New Missouri Entomologist — Mr. Julius R. Anderson, formerly of the Department of Entomology at the North Dakota Agricultural College, has been appointed State Entomologist of Missouri.

Gleanings readers know him as the North Dakota reporter for "North, East, West, and South". In his new position, Mr. Anderson has consented to report on conditions in Missouri and readers from this area are urged to read his account in this issue of Gleanings.

Julius Anderson received his beekeeping training at the College of Agriculture, Fargo, North Dakota. He is a former student of Dr. J. A. Munro, noted beekeeping specialist.

* * *

The annual meeting of the **Iowa Beekeepers' Association** will be held at Ames on Nov. 17 and 18. The program features talks on stock improvement, the future of legumes, income tax, round table discussions on honey house sanitation, and honey production problems. Banquet on Tuesday the 17th, at 6:00 p.m.—F. B. Paddock.

* * *

The **Southern Tier Beekeepers' Association** will hold its next meeting at C. L. Reynolds Radio and Appliance salesroom, 2527 Sturges St., Binghamton, New York, on Tuesday, Nov. 17 at 8 p.m. Light lunch will be served. This is our regular business meeting and election of officers for the coming year. Everyone is urged to make a special effort to attend this meeting. At this time membership dues will be accepted.—H. B. Webb, Publicity.

* * *

The **Westchester County Beekeepers' Association** will hold its next meeting at 2:30 P.M., Nov. 15 at the Odd Fellows Hall, 20 Lockwood Ave., New Rochelle, N. Y. At this meeting our members are given awards for the best entry in our honey show in the following classes; dark, amber, light extracted; chunk; comb; and the best one pound wax display. Come and let's hear how you made out this year, and bring a friend.—Carlton E.Slater, Pub.

The **Ohio State Beekeepers' Association** will hold its winter meeting Dec. 7, 9:15 A.M. in the State Office Building in downtown Columbus, Ohio. A regular business meeting will be held, with election of officers for the coming year, and payment of membership dues. There will be door prizes. Bring the ladies, too. — R. L. Livermore, Secretary.

* * *

Middlesex County Beekeepers' Association (Mass.) will hold its regular indoor meeting at the State of Mass. Experimental Station at Waltham on November 28, at 6:30 P.M. The results of the National Honey Week will be discussed and instructive pictures shown. At the October meeting which opened with a catered dinner for the kick-off of the "HONEY WEEK" colored pictures were shown and the activities of the summer season were reviewed by more than 100 members and friends present.—John H. Furber, Sec.-Treas.

* * *

Tazewell Beekeepers' Association concluded its out-door meetings of 1953 with a wiener roast, held on October 11 at the farm of Mr. J. F. Strope in Pekin.

It was decided at the business meeting to hold all winter meetings at the home of the president of the organization, Mr. O. D. Price in Manito. The next meeting was scheduled for November 15.

The members of this organization reported a very poor honey crop, some had no crop at all and comb honey is non-existent. Like all good beekeepers, our members are also looking for a bumper crop next year, 1954.—Joseph Jachman, Sec.

* * *

The **Montana State Beekeepers' Association** 32nd annual meeting will be held in Billings, at the Northern Hotel on Dec. 4 and 5, beginning at 10 a.m. Reports from delegates attending the National meeting at San Jose, Calif., also of Montana Citizens Freight Rate Association, Mr. Howard Foster, member of Executive Committee of Ameri-

can Beekeeping Federation, will tell of the need of closer cooperation between state associations and national for the benefit of all beekeepers. There will be other interesting topics, especially for Montana beemen. — Mrs. O. R. Burdett, Sec.-Treas.

* * *

The annual convention of the **California State Beekeepers' Association** has been scheduled for San Jose on December 1, 2, and 3, in Hotel Saint Claire. The California Bee Breeders' Association, the Ladies' Auxiliary, and the County Apiary Inspectors usually hold meetings at the same time.

The program will feature discussions of honey house standards, pollination practices and pest control, and marketing problems. Of interest to many California beekeepers and to visitors from other states will be the exhibit of several different kinds of hive loaders as well as labor-saving gadgets.

Suggestions for additional topics of interest on the program should be directed to the Secretary, A. K. Whidden, 1326 Main Street, Corona, California. —J. E. Eckert, Apiculturist.

* * *

Heavy Honey Flow Hits Tennessee—Beekeepers in Tennessee have reported a heavy honey flow during the middle of September. Bees were gathering large quantities of nectar from Dodder **(Cuscuta spp.),** a parasitic plant growing in lespedeza fields.

A surplus of two supers per colony was harvested in Central Tennessee. The honey is apparently amber and of fair quality. This is the first time that a surplus has been reported from Dodder.

* * *

Using Carbolic on Cloudy Days—Mr. J. E. Darham of Laurel, Montana, devised an efficient way of using carbolic acid to remove honey on cloudy days. He places a heated brick on the carbolic tray, and the warmth produces more fumes than normally. He speeds things up by first starting the bees down with a little smoke.

* * *

Honey Plugged on TV — "Mighty fine honey makes mighty fine crackers," says the Nabisco Baking Company on their TV spot announcements. Using a cartoon to advertise their Nabisco Graham Crackers, they show honey bees gathering nectar from the flowers and then bringing it into the Nabisco baking plant.

* * *

How to Throw a Waxing Bee—Selling wax and plugging honey goes hand-in-hand in the new leaflet released by the Consumer Service Dept. of Johnson's Wax, Racine, Wis. Suggested honey menus and recipes are given together with ideas to take the drudgery out of waxing floors.

Readers can get a copy of this new leaflet, "How to Throw a Waxing Bee" by simply writing to the address given above. It may be possible to get a quantity of this publication for local distribution.

* * *

New Honey Processing Equipment—Mr. Ed Braun of the Ottawa Experiment Station recently gave New Yorkers a verbal glimpse of a new development in honey processing. Reporting to the annual summer meeting of the Northern New York Beekeepers' Association, he pointed out that the new Canadian heat exchanger will enable the beekeeper and honey bottler to heat and cool honey safely without endangering its flavor.

Research is being carried on in Canada to find strains of legumes that carry a higher percentage of honey as well as providing better hay and forage. That sounded good to the assembled beekeepers.

Other guest speakers on the program included Dr. Eva Crane, Editor of the BEE WORLD; Mr. & Mrs. Morganthaler from Switzerland; Ed Braun and Victor Mesley from Ontario; Charles Mraz from Vermont, and Dr. E. J. Dyce from Cornell University, Ithaca, New York.

* * *

Honey Ferments in Hive—A serious case of honey fermenting in the hive with plenty of bees in the colony was recently reported by Mr. H. F. Saeger of Holly, Michigan. "The problem is not mine alone," says the beekeeper, "it covers most of the central part of the state."

The condition started about the first or second week of the clover honey flow. A lack of bees flying from strong colonies was the first symptom that

something was wrong. When the situation became very bad the bees left the colony and spread out on the ground in front of the hive.

Sometimes you could smell the odor of fermentation quite a distance away while at other times there was no odor at all. The trouble appeared in strong colonies stacked with as many as five deep supers, and these colonies received ventilation through a raised inner cover.

"In some of my inspection work I have seen as high as three full-depth supers of what had been fully sealed white honey but now completely void of honey with the caps still in place," commented Mr. Saeger. "The combs were so dry that when you scratched them it sounded like crushing egg shells. This fermentation can occur in a few cells in one super or cover the entire hive, and it can be found in any number of colonies in an apiary."

* * *

Honey—Food for a Queen — An eight-page article on the value of Honey appeared in the August issue of PREVENTION magazine, a journal devoted to the conservation of human health. Called "Honey—Food for a Queen", this article should stimulate a lot of interest that will eventually result in more honey sales.

Copies of PREVENTION magazine can be obtained from the Rodale Press, Emaus, Pa.

* * *

Mount Everest, Presentation Fund for Edmund Hillary — The fact that Mount Everest has at least been climbed **by a beekeeper,** has given pride and pleasure to beekeepers the world over. The Bee Research Association, as publisher of the international journal BEE WORLD, is inaugurating a fund to mark the outstanding achievement of the New Zealand beekeeper Edmund Hillary in reaching the summit of Mount Everest. The form which the recognition will take, and other details not yet decided, will be announced later. Beekeepers in all countries are invited to contribute to this fund, and beekeepers' associations may care to organize subscriptions in their own countries and pass them on to the central fund.

Subscriptions, and any other communications, should be sent to the Hon. Subscription Secretary, Bee Research Association, 10 Barnett Wood Lane, ASHTEAD, Surrey, England.

* * *

World List of Bee Research Workers — This List edited by Dr. Eva Crane, gives the names and addresses of 370 research workers in 50 different countries who are working on bees, bee products, beekeeping methods, and allied subjects. The List is arranged in alphabetical order of country; for each country a list is given of the institutes where research on bees is being carried out, together with the names of those at each institute who are concerned with bees. This is followed by a list of research workers in the country not attached to any institute. There is also an alphabetical index of names. 40 pages. Price 5/- or 75 cents post free from Hon. Publications Secretary, Bee Research Association, 2 Northover, BROMLEY, Kent, England.

* * *

U.S.D.A. Eliminates Payments Under Honey Export Program. — After announcing payment reductions from 4 to 3.6 cents a pound (effective September 25), the U. S. Department of Agriculture has now eliminated any payments under the honey export program. This became effective as of October 17, 1953, and will continue through March 31, 1954, according to the Production and Marketing Administration.

At present the government has already purchased within five million pounds of last year's program. The P.M.A. feels that in view of this fact and the current short honey crop, that will be approximately 30,000,000 pounds less than last year, it was necessary to end the subsidy if the domestic demand is to be supplied.

* * *

New Honey Patent—A new patent for "Crisping honey" was obtained on Jan. 6, 1953, by Mr. F. E. Hagemann of Chico, California. He is able to "Crisp" honey by a process that involves the addition of vinegar, then fermentation, heating, and cooling. A copy of this patent (2,624,678) can be purchased for 25 cents from the U. S. Patent Office, Washington, D. C.

(Contineud on page 700)

Buy and Sell

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate: 15c per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in by the 10th of the month preceeding publication.

HONEY FOR SALE

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. The Hubbard Apiaries, Onsted, Michigan.

IOWA Honey, one can or truck loads. Russell D. Smalley, Beaver, Iowa.

CLOVER extracted honey in sixties. Abram Brubaker, Lancaster, Pa., Rt. 1.

FOR SALE—White Clover Honey, write for prices. Lloyd E. Allen, Tipton, Mich.

TRUCK LOAD of mild, heavy, clear honey. Wayne Keller, Oshkosh, Nebr.

CLOVER HONEY, white extracted, 17c pound in sixties, 5 or more 60's, at 16c. Heated and strained, 18c in sixties, 17c 5 or more. Lose Brothers, 206 E. Jefferson, Louisville, Ky.

MICHIGAN extra white clover honey in new sixties. Car or truck. Wesley Johnston, Port Hope, Michigan.

OHIO CLOVER HONEY, 5 pounds post paid, $2.25. Livermore Apiaries, Belle Center, Ohio.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We can not guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on COD terms except where the buyer has thoroughly established his credit with the seller.

CASH for your comb honey and all types extracted. Send sample and best price. Buckeye Honey Co., 3930 No. High St., Columbus 14, Ohio.

CASH for Beeswax. Write as to quantity and we will quote price. Muench-Kreuzer Candle Co., Inc., Syracuse, N. Y.

HONEY WANTED—All grades and varieties. Highest cash prices paid. Mail samples. State quantity. HAMILTON & COMPANY, 2613 South Yates Ave., Los Angeles 22, California.

WANTED—Light amber clover, amber, goldenrod, buckwheat. Advise what you have for immediate delivery. Roscoe F. Wixson, Dundee, New York.

WRITE FOR shipping tags and quotations on rendered beeswax. We buy from one pound up and if you have over 25 pounds let us work it into foundation for you at a 25 percent saving. Walter T. Kelley Co., Clarkson, Kentucky.

CASH FOR YOUR HONEY—Light extracted or comb. Regular trade send sample. 60-pound cans furnished if desired. W. R. Moomaw, Stone Creek, Ohio.

HONEY WANTED, any amount. If you want more for your honey, sell it to Cloverdale Honey Co., Fredonia, New York.

CASH PAID for white and amber extracted honey. Send samples and state quantity available. Prairie View Honey Company, 12303 - 12th St., Detroit 6, Mich.

WANTED—Carloads or less of honey and wax. Any grade. Send sample and best cash price. Alexander Company, 819 Reynolds Road, Toledo, Ohio.

ALL GRADES HONEY AND WAX WANTED—Mail samples, advise quantity and cash prices delivered to us. HONEY SALES COMPANY, 1808 NO. WASHINGTON AVE., MINNEAPOLIS 11, MINN.

WANTED — Honey all grades. Quote prices and send sample. Write Stoller Honey Farms, Latty, Ohio.

WANTED — White extracted or comb honey. Send sample. Millersport Honey Co., Millersport, Ohio.

BEESWAX OR HONEY WANTED in trade for supplies or cash. Hodgson Bee Supplies, Ltd., 575 - 13th Ave., New Westminster, B. C., Canada.

HONEY WANTED, all grades in 60's. Mail samples, advise quantity, best price. A. I. Root Company of Syracuse, 1112-14 E. Erie Blvd., Syracuse, N. Y.

WANTED—All grades of extracted, also comb and cut comb honey. No amount too large or too small. Honeymoon Products Co., Box 85, River Rouge, Mich.

WANTED buckwheat honey. Eastern Food Products, 115 Division Ave., Brooklyn, N. Y.

FOR SALE

WRITE FOR CATALOG — Quality Bee Supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies and Comb Foundation. Onsted, Michigan.

THE BIGGEST BEE SUPPLY Catalog published (64 pages) free for the asking. Listing many items not found in other Catalogs. No agents—buy direct and save 20%. WALTER T. KELLEY CO., CLARKSON, KENTUCKY.

FOR SALE — New heart cypress 10-frame bottom boards. K.D., 10 or more $1.00 each; 50 or more, 90 cents each; 100 or more 85 cents each. One nailed up sample postpaid $1.25. Fred L. Poole, Elizabethtown, Rt. 2, Box 67, No. Car.

ELECTRO Filling Machines, users and distributors. Write Stoller Honey Farms, Latty, Ohio.

BEE SUPPLIES—Tin packages; 10 sizes glass jars; paper shipping supplies; window cartons and other items. Roscoe F. Wixson, Dundee, N. Y.

The only comb foundation plant in the east. We sell foundation, work your wax, render combs and cappings. Robinson's Wax Works, R. D. 3, Auburn, N. Y.

FOR SALE—Complete set of Gleanings, 1875-1950. Lacks only 6 volumes, $100. Francis Higgins, Gallaudet College, Washington 2, D. C.

BEES AND QUEENS FOR SALE

We use all possible care in accepting advertisements but we cannot be held responsible in case disease occurs among bees sold or if dissatisfaction occurs. We suggest that prospective buyers ask for certificate of inspection as a matter of precaution.

YANCEY HUSTLERS—Three-band Italians. They get the honey. Queens balance of season, $1.00; $10.00 dozen. Caney Valley Apiaries, 2500 Nichols, Bay City, Texas.

YELLOW ITALIAN BEES. Real producers. Health certificate. Satisfaction guaranteed. Queens, $1.00 Airmail. O. E. Brown, Route 1, Asheboro, N. C.

CAUCASIAN Bees and Queens, 2-lb. pkg., $2.75; 3-lb. pkg., $3.50. Queens 75c each; 100, $65.00. Lewis & Tillery Bee Co., Greenville, Ala.

GOLDEN SELECT UNTESTED QUEENS, 1 to 25, $1.00 each; 25 up, 90c. Carolina Bee Farm, Graham, N. C.

CAUCASIAN QUEENS EXTRA GENTLE. Select queens, 1 to 25, $1.00 each; 25 up, 90c Black River Apiaries, Currie, North Carolina.

THREE BANDED ITALIAN queens. Select. 1 to 25, $1.00 each; 25 up, 90c each. Alamance Bee Company, Rt. 1, Graham, North Carolina.

25 two-story 10-frame colonies bees. Leo Cushman, Plymouth, N. Y.

FOR SALE—Holly Linn Apiaries, Dayton, Texas—Well established wholesale and retail honey business—1,000 colonies bees, best southern locations, extracting, and packing equipment, good buildings. Mrs. Tyra Fulton, Box 681, Trinity, Texas.

SEEDS

HONEY PLANTS: Seeds-Trees-Plants. Illustrated catalog on request. Pellett Gardens, Atlantic, Iowa.

MISCELLANEOUS

SECTION COMB HONEY production procedure steps, 50c. Glossary of Beekeeping Terms, 50c. United Industries, Dept. L, Box 440, Madison 1, Wisc.

Bargain in new or used honey cans or Root Supplies for cash or honey. Buckeye Honey Company, 3930 N. High St., Columbus 14, Ohio.

HONEY WANTED
Carloads and less than carloads. Mail sample and best prices in all grades.
C. W. AEPPLER COMPANY
Oconomowoc, Wisconsin

CAUCASIANS
CARNIOLANS
End of 1953 queen rearing season. We thank our many customers for their orders. * * Planning to have more queens earlier in 1954. Farthest south of any queen breeder in the U. S.
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CAUCASIAN APIARIES
Breeders of
Ladylike Caucasian
bees and queens
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In 1954
Quality Does Not Cost
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ITALIAN
Package Bees and Queens
Jackson Apiaries
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Stock for 1954
When your plans are made, write us about your 1954 needs. Thanks for your business during 1953.
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DONALDSONVILLE, LA.

HONEY LABELS
Improved designs, embodying color, balance, simplicity, and distinction. Please send for free samples & prices.
C. W. AEPPLER COMPANY
Oconomowoc, Wisconsin

JUST NEWS

(Continued from page 697)

Losses from Effects of Insecticides Lighter in Arkansas This Year — In spite of all the adverse circumstances this year the Arkansas loss from insecticides has been lower than expected, according to the APIARY BOARD BULLETIN. One reason, the report continues, has been the dry, hot weather which seemed to be unfavorable to heavy infestations of obnoxious insects. Another important factor which held down such loss has been the decline in the use of arsenicals and an increase in the use of such insecticides as Toxaphene and 3-5-40. The sulphur in this formula seems to be a repellant to bees.

* * *

New York Beekeepers Plan DDT Tests—A series of DDT tests is being planned by 13 northern New York beekeepers who recently filed a suit for $200,000 against the State Conservation Department. The beekeepers want to prove the validity of their charges that careless spraying of local forests killed enough of their honey bees to cause considerable damage to their honey crop.

The tests will be conducted in cooperation with Dr. W. L. Coggshall, N. Y. Extension Apiarist, and Dr. J. E. Dewey and Dr. G. G. Gyrisco, Cornell University entomologists.

* * *

The Annual Convention of the **Ontario Beekeepers' Association** will be held at the King Edward Hotel, Toronto, Ontario, on November 30th and December 1 and 2, 1953. An outstanding program has been arranged, at which we hope to have several speakers from the United States who will discuss management problems. There will also be included the following subjects:

The Weather and Nectar Secretion —R. W. Shuel, O.A.C., Guelph; Pasteurizing and Processing Equipment—E. Braun, Central Experimental Farm, Ottawa, G. F. Townsend, O.A.C., Guelph; The Use of Sulfa Drugs in Disease Control—C. A. Jamieson, Central Experimental Farm, Ottawa, P. W. Burke, O.A.C., Guelph; The American Honey Institute—Mrs. Harriett Grace, Madison, Wisconsin.

INSECTICIDES — PDB (Paradichlorobenzene) for wax moth control. Write for delivered prices and circular. BURTON APIARIES, WASHINGTON, INDIANA.

HELP WANTED

WANTED — Young men interested in learning bee supply business. Openings in shipping, sheet metal, and printing departments. The A. I. Root Co., Medina, O.

HELP WANTED — Two men for the coming season. Give references. Howard Weaver, Navasota, Texas.

WANTED: Experienced queen breeder for season of 54. Walter D. Leverette, P. O. Box 364, Fort Pierce, Florida.

MAGAZINES

THE BEE WORLD international and scientific journal on bees and beekeeping, with apiculture abstracts. Monthly, including membership in the Bee Research Association, $3.00 per annum, including apicultural abstracts. Dr. Eva Crane, Director, 55 Newland Park, Hull, Yorks, Eng.

Read the South African Bee Journal. Published every two months. Subscription 7/6 per year to the Treasurer, P. O. Box 3306, Cape Town, South Africa.

Know interesting facts concerning the bees of India through the INDIAN BEE JOURNAL, published in English by the Bhupen Apiaries (Himalayas), Ramgarrh Dist. Naini Tal, U. P., India, or available through them. Subs. Rs7/ or 10 shillings or 2.25 dollars per annum. Single copy Rs ¼s. 1/9 or 40 cents (International Money Order). Payment in mint postage stamps of your country accepted.

DO YOU FIND it difficult to secure information about sheep and sheep ranching methods? The SHEEP AND GOAT RAISER reaches more sheepmen with more information on range sheep than any other magazine published. Subscription $1.00. Hotel Cactus, San Angelo, Texas.

Appropriate entertainment has been arranged for the evening of December 1st, and the ladies are all invited to tea, with the compliments of the Ontario Association, at 3:30 on the afternoon of Tuesday, December 1st.

All those wishing accommodation at the King Edward Hotel should make reservations with the Secretary, Professor G. F. Townsend, Ontario Agricultural College, Guelph, Ontario.

* * *

Alabama Beekeepers' Association will hold its annual meeting in the Senate Room of the Capitol Building in Montgomery, Alabama, November 10, 1953. Prominent speakers for the occasion include Jim Hambleton, Chief of the Division of Apiculture and Biological Controls, Beltsville, Maryland; M. G. Dadant of the Dadant and Sons, Hamilton, Illinois; Dr. C. L. Farrar, U.S.D.A., North Central States Bee Culture Laboratory, Madison, Wiscon-

(Continued on page 701)

YORK'S BEES & QUEENS
Quality Bred Italians Dadant Starlines

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(The Universal Apiaries)

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BETTER-BRED QUEENS THREE-BANDED ITALIANS
We wish to thank our many customers for the business given us this year.
We are now booking orders for 1954.
CALVERT APIARIES Calvert, Alabama

TRENDS IN HONEY PACKING PLANTS, EQUIPMENT, AND METHODS

(Continued from page 669)

the argument that honey is a natural product and there is no valid reason for packers trying to make honey look like a manufactured syrup. At any rate most packers will agree that the practice is time consuming and costly. Filtration is a large subject in itself and no attempt will be made to include it in this discussion.

Even small packers find that it pays to use some type of accurate filling machine. Such machines normally pay for themselves in two or three years by avoiding overfill. When filling by hand the tendency is to over rather than to underfill. Various types of fillers are on the market. The positive piston type appears to be the most popular as these machines will capably handle both warm and cool honey.

In preparing finely granulated or creamed honey for market by the Dyce Process, the steps are about the same up to the point of cooling the honey approximately to room temperature. It is definitely not necessary to filter the honey. At this point from 5 to 10 per cent of previously processed, yeast-free honey (called seed) is thoroughly incorporated into the cooled liquid honey. It is then run into the final market containers and stored at a controlled temperature between 55 and 57 degrees F. until it is completely solid. This normally takes about eight days.

Large cooling rolls or dairy pasteurizers, as previously discussed, are frequently used to cool the honey. Especially designed strong breakers are used to prepare the seed. For best results the seed or starter should be smooth and creamy. This procedure breaks up individual crystals and provides more nuclei to stimulate crystal formation. At the same time it facilitates distribution of the crystal nuclei in the liquid honey.

(to be continued)

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Shippers of
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GOOD ITALIAN QUEENS
By return mail, $1.00 each
White Pine Bee Farms Rockton, Pa.

QUEENS
By Air Mail
75c each
10 or more, 65c each
CARLUS T. HARPER
New Brockton, Ala.

JUST NEWS

(Continued from page 700)

sin; W. E. Harrell of Hayneville, Alabama; W. A. Ruffin and George Blake, Auburn, Alabama; and others.—F. E. Guyton, Sec.-Treas.

* * *

The annual Convention of the **Illinois State Beekeepers' Association** will be held at St. Nicholas Hotel in Springfield, Illinois on the 6 and 7 of November. This will be an outstanding meeting with our most distinguished speakers on the program. Banquet will be held 6:30 p.m. of the 6th and everyone is invited to attend.—Hoyt Taylor, Secretary.

Requeen Now:

To insure strong productive colonies next spring, be sure all colonies are headed by vigorous young queens capable of producing full combs of brood.

Such queens are to be had in Island Hybrids (Kelley's Island Hybrid). We have the equipment and stock developed on the Lake Erie Islands and can supply your needs from our Georgia queen yards. We have had many good reports about these queens and feel you can get the same results. Queen prices balance of season are:

	Island Hybrid	Reg. Rossman Stock
1-25	$1.25 ea.	$ .80 ea.
26 or more	1.15 ea.	.65 ea.

"They Produce"

Place your order early to insure queens when you want them.

Rossman Apiaries
P.O. Box 133 Moultrie, Ga.

LIVE AND LEARN

(Continued from page 671)

wasting that heat just couldn't do any good. And besides, I was so darned uncomfortable myself when the hives weren't packed, that I compromised with myself. So now I wrap the hives, with a little insulation on top. It doesn't cost much, and only takes about seven minutes to the hive, so why take chances. In a hard winter, it might save enough to pay the cost in time and money over a period of years.

I have seen many winter days when the temperature ran way up, and when the sun went down, the thermometer dropped with it. I can easily imagine a good colony breaking cluster, going out for a flight, and, before they could assemble again, the cold would catch them and they couldn't get together. In a lightly packed hive, the change would be slowed down to the point that they could cluster again, and that's what I am banking on. One thing has been definitely proved. It doesn't do any harm to pack lightly, and conditions can easily arise where it would do a lot of good. Anyway, I'll sleep better, and that's that.

JENSEN Says:
It has been a pleasure to do business with so many of our old friends through another season, and to add many new names to our list.
We're looking forward to 1954 with optimism and anticipation, and we hope our goods and service have pleased you, and that we will be hearing from you soon.
"Magnolia State" Pure Italians — Dadant's Improved
Our Old Reliable — "Four-way Hybrids"
They Stand the Test — First in the Field
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Personally Reared
Caucasian Queens
$1.00 each
Large lots 90c each
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Write us for your early queens and package bees.
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Canada's
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The most revolutionary improvement in the hive since Langstroth—

The "UNI-TEMP" ALUMINUM HIVE

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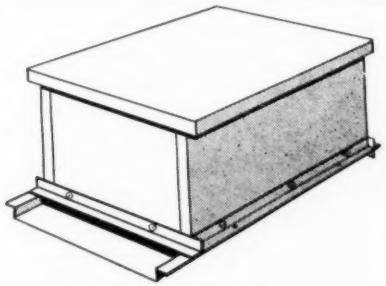

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GARON THREE-BANDED ITALIAN QUEENS

Write us for late queens at October prices.

You may book now for 1954 package bees without obligations and at prices to be published later.

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ITALIAN QUEENS **PACKAGE BEES**
Packages With Young Laying Queen
At the Following Prices:

	1-9	10-99	100-up
2 lb.	$3.25	$3.00	$2.75
3 lb.	4.25	4.00	3.75
4 lb.	5.25	5.00	4.75

After July 1, Queens $1.00 each—Starline Hybrids $1.25

Reg. U. S. Pat. Off.

We guarantee safe arrival, a health certificate with each shipment, and prompt service.

Our Queens are reared under my own personal supervision, our aim is QUALITY NOT QUANTITY.

LITTLE'S APIARIES P. O. Box 122 Shelbyville, Tennessee

ITALIAN QUEENS
$1.00 each
Pure mating guaranteed
W. E. PLANT
Hattiesburg, Mississippi

Package Bees & Queens
Quality & Service
C. F. KOEHNEN & SONS
Glenn, California

Booking orders now. Over 30 years a shipper. Send for Free Circulars.

BLUE BONNET APIARIES
Weslaco, Texas

SELECTED ITALIAN QUEENS
$1.00 each until Jan. 1, 1954
CAUCASIANS
90c

All queens shipped Air Mail and guaranteed to please. From June 1st to Nov. 1st.

Walter D. Leverette Apiaries

P.O. Box 364 Fort Pierce, Fla.

The New Zealand Beekeeper
The Quarterly Magazine of the National Beekeepers' Association of New Zealand. Better Beekeeping—Better Marketing. Subscription, 8 shillings per year, payable to

THE GENERAL SECRETARY
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VISIT OUR FACTORY AND MAMMOTH CAVE

Only 30 miles from our factory to the cave.

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